BURMA GAZETTEER

BASSEIN DISTRICT

VOLUME A

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BASSEIN DISTRICT.

CHAPTER I.

PHYSICAL DESCRIPTION.

Area—Boundaries—Physical aspect—Islands—Rivers—Lakes—Hills and passes—Geology—Soils—Climate—Rainfall—Temperature—Prevailing winds—Fauna—Birds—Reptilian fauna: Crocodiles, Snakes—Fish—Forests.

Area. Bassein is one of the five districts in the Irrawaddy Division and had in 1872 an area of 8,739 square miles: it was reduced to 7,047 square miles before 1881, and in 1893 by the formation of the Myaungmya District it was further reduced to 4,127 square miles.

This area lies between 15° $50'$ and 17° $30'$ N. and 94° $11'$ and 95° $28'$ *E.*

Boundaries. The district is bounded on the north by the Sandoway and Henzada Districts: on the east by the Ma-ubin and Myaungmya Districts, and on the south and west by the Bay of Bengal which curves round its southern and western edges at the elbow formed by Pagoda Point. In greater detail the boundaries are as follows:

Starting from the south-east corner of the district the Thetkèthaung mouth of the Bassein river divides the lower part of Ngaputaw Township from the Myaungmya District. From the point at which the Thetkèthaung and Bassein river become one the Bassein river forms the eastern boundary as far as the Panmawaddy river. The eastern boundary follows the Panmawaddy river as far as Thayutkyi and then proceeds in an irregular line east and north-east by Ngamyazu, Akeywa, Leikpok, and Kaingkwin to the Minmanaing stream; thence in a north-north-west direction, following the Minmanaing stream to a point about half a mile beyond Mèzali village. It then strikes east and south for about three miles; thence north and slightly east to the Pyinmana stream, thence in an irregular easterly direction for about four miles. The line curves north to

Hlezwè village and thence proceeds generally north and east by the Wami, Gamin, Kayagan, Kawthalaing, and Tawtalu streams as far as Ingala myauk village.

The boundary from Ingala myauk turns to the west and proceeds in an irregular north and west line by Thayagon, Thabyeyo, Kyayo, Sitmyauk, Ladidaung, and Payadaung villages to Hlezwè; thence west and north by the Daga river to Thetkèbyin, thence west-north-west crossing the railway line, and from a point about three miles west of the railway line turns in a south-westerly direction and proceeds by the Yenauk stream to Kyigon, thence in a westerly and north-westerly direction to the Ngawun river about a mile north of Bokchaung. The boundary line crosses the loop formed by the Ngawun below Mèzali and follows the Ngawun river south to the Kyaukchaunggale stream which it then follows as far as Yegyaw. It then proceeds south-west to the Yegyaw and Kyat streams; thence in an irregular north-westerly direction to Letpanywa in the low hills; the boundary line now makes an abrupt turn to the south for about fourteen miles and then an equally abrupt turn to the north-west to a point about two miles north-east of Kyaukchaungywa; thence it proceeds west to the sea which it reaches at a point between the Gwa and Kyaukchun rivers. From this north-westerly point the coast line forming the western boundary stretches for over a hundred miles, measured in a straight line, in a generally south-south-westerly direction to Cape Negrais; thence it inclines south by east for nine miles to Hmawdin or Pagoda Point, the southern extremity of the Arakan Yoma.

Bassein thus forms an irregular wedge-shaped strip of coast land and delta country narrowing from north to south in the extreme south-west corner of the province. It is divided into very unequal parts by the Arakan Yoma which enters the district at its north-western corner and runs down its western side at no great distance from the sea.

The main portion lies to the east of this range, and consists of a flat alluvial plain, the northern end of which is rich rice land. Farther south between the Ngawun and Daga rivers, it is flooded and poor. To the east of the Daga and southwards toward Bassein town the land is slightly higher and more fertile. To the west of the Ngawun, as far as a point opposite the junction of the Daga and Ngawun rivers the land is flooded and generally unculturable. Below that point it is higher and of fair quality, while south of the town of Bassein it is typically deltaic, intersected by innumerable tidal creeks, marshy, and

covered with mangrove jungle, with some stretches of rice land here and there.

West of the Arakan Yoma from the Sandoway border on the north-west the first few miles consist of a gently shelving sandy beach backed by undulating ground covered with forest; below this rocky headlands alternate with stretches of narrow sandy beach, the forest here and there coming down to the water's edge: beyond Cape Negrais, where the hills enter the sea abruptly forming a bold and rugged escarpment, the coast is generally rocky.

With the exception of the Arakan Yoma, which here is comparatively low, there is no high land in the district.

Islands

The whole face of the country is intersected by tidal channels and there are numerous islands in the lower reaches of the Bassein river. Diamond Island, a low tree covered island situated just off the mouth of the Bassein river and about five and a half miles from the mainland, is of importance as a pilot and wireless station.

The island is diamond in shape and is surrounded by a reef some 300 yards from the shore. It is 1,400 yards long from north to south, 700 yards wide, and about three miles round.

Of greater historical interest is Hainggyi or Negrais Island where the first British trading settlement in Burma was started. It lies in the Bassein river near the western bank three and a half miles north of Pagoda Point and is conspicuous by a hill at its northern end.

Rivers

The principal river is the Ngawun or Bassein river, the most westerly of the main channels through which the waters of the Irrawaddy reach the sea. It leaves the main river about nine miles above the town of Henzada by a channel three hundred yards wide which is however choked by a bank of sand uncovered in the dry season. After a course of forty miles in the Henzada District it enters the Bassein District a little north of Bokchaung, at which point it is only thirty-five feet above sea level. Its main tributaries are the Tabu, Shwenyaungbin, Kyaukchaunggyi, Pebin, and Thandwe streams. The Daga leaves it three miles from the main stream of the Irrawaddy in the Henzada District to rejoin it again about thirteen miles north of Bassein. Below Bassein the Ngawun is joined by the Panmawaddi, and lower down other large tidal creeks connect it by numerous smaller channels with the other mouths of the great river, till after a tortuous course of two hundred miles it falls into the sea at Hmawdin or Pagoda Point. In the upper part the Ngawun is navigable throughout by river

steamers in the rains, but in the dry season steamers cannot go beyond Ngathainggyaung. It gradually broadens from about a hundred yards in the higher reaches to nearly a thousand yards above Ngaputaw, below which its course is generally south-south-west, and, though many rocks and islands occur, navigation is by no means difficult. The right bank from Ngaputaw down to Long Island is low, muddy, and covered with jungle: thence to the site of Dalhousie it is low and from Dalhousie to Hmawdin somewhat hilly. The left bank is low and hilly alternately to Hngetpauk; from thence to the mouth of the Pyinkayaing it is low and very muddy: a fine sandy beach stretches to Yethoung, and from here to Puriam Point, which marks the eastern shore of the mouth, the margin is rocky. From a little above the Sesostris rock off Long Island the river contracts, but directly Long Island is passed it opens out and gradually widens to its mouth. The Ngawun is navigable for ocean-going ships up to twenty-six feet draught as far as Bassein town, seventy-five miles from the mouth.

The Daga, of which the principal tributaries are the Yegyi and Minmanaing creeks, leaves the Ngawun three or four miles from its northern mouth and enters the Bassein District near Hlezwè. Flowing in a generally south-westerly direction but with long and tortuous windings it rejoins the Ngawun thirteen miles north of Bassein. In the rains there is a strong current downwards, but in the dry season the tide is felt as far as Thabyehla and neaps at fifteen miles further at spring tides. It is navigable by light draught river steamers as far as Kyonpyaw throughout the year.

The Panmawaddy enters the district about two and a half miles north-west of Thigon and flows generally south-south-west. After a course of about thirty-three miles it is joined by the Minmanaing, here called the Myaungmya river, and two miles further on by the Thetkè from the north: ten miles below this it unites with the Ngawun and with that river and the Thetkè forms Ngaputaw Island. River steamers can ascend at all seasons with little difficulty as far as the village of Thigwin, a distance of forty-eight miles, where the stream is about two hundred feet broad.

In spite of the general low level of the land there are only two permanent stretches of water of importance.

The Inye Lake, some seven miles in circumference with a fairly uniform breadth of two hundred and fifty to three hundred yards and a depth of as much as twenty to forty-five feet in the rains and fifteen feet in the dry weather, is

connected with the Daga by a small outlet which at the period of the rises during the south-west monsoon replenishes the water of the lake, and on the subsidence of the river carries off the surplus water. Both in the small stream and the Daga the water is shallower than in the lake. By some it has been supposed that it was formerly a portion of the bed of the Daga, by others that it was formed by causes totally independent of stream action by a gradual subsidence of the substratum or by a slip of the lower-lying beds. It is said to be a fact that the water of the lake when relieved of the surcharge from the river has a different colour (dark opaque olive) from that of the river when uninfluenced by the efflux from the Irrawaddy. The importance of the Inye Lake as a fishery is noticed afterwards.

The Lahagyi Lake on the right bank of the Ngawun in the Thabaung township is a long narrow stretch of water ten miles long by a mile broad, but is so shallow as to permit of extensive "mayin" cultivation.

Hills and passes.

The only hills of any size are the Arakan Yomas which rise to the height of some fifteen hundred feet. Across them are several passes used by travellers but they are all more or less difficult and impracticable except during the driest portion of the year. The most northern pass is the Bawmi, the highest point of which is two hundred and seventy feet only above the sea level, from the junction of the Salu and Bawmi streams to the village of Thitnanku on the Thin. Further south there are two passes by the Kyaungtha and Shengma streams: the crest of the first is three hundred and eighty-one and of the second two hundred and eighty-four feet above the sea. By the Ngayut river a pass leads over the mountains to the Pin stream: the principal obstructions are the rocks and boulders, the elevation of the hills being insignificant. Lastly from Yutpa to Letpan in the extreme south, a little north of the latitude of Cape Negrais, a rarely used track crosses the hills at an elevation of two hundred and seventy feet.

Geology.

Along the coast especially between Cape Negrais and Hmawdin occur beds of blown sand, somewhat more earthy than sandy, which from their reddish colour when viewed from a distance are named Kanni (Red Bank). A deposit of a somewhat similar origin only coarser and distinctly accumulated under water is met with along the course of some of the less sheltered tidal creeks: it is a calcareous sand composed of comminuted shells and corals of living species, consolidated into a more or less calcareous sandstone or ragstone. To the altered rocks of the southern region was

given the term Negrais beds, from their being very characteristically displayed about Cape Negrais; the term includes all the rocks met with in the country stretching northward from Cape Negrais along the Arakan range and western coast older than the Nummulitic and younger than the Triassic. The difference in mineral character in the Negrais rocks is very great. In some places flaggy massive sandstones occur, quite unaltered, and dipping at moderate angles, whilst in places sections are exposed of highly altered shales and sandstones, and in some spots the sandstone is seen converted into a cherty rock seamed with silica and evidently subjected to an alteration of an intense kind.

Near the pass leading to Yutpa and north of Cape Negrais is the so-called "mud volcano," situated on the hill side, where it rapidly slopes down to the shore, and within a stone's throw of the sea. A narrow footpath exists along the coast here, on the east of which, at one spot, a loose pulverulent shale rises, a few feet in height and about thirty feet at most in diameter. This mound consists of a greenish shale, very much comminuted and mixed with fragments of veins of calcite. A very hydrated peroxide of iron in small lumps is seen, lying about, but nothing else to indicate any peculiarity, still less volcanic action. This "mud volcano" in fact seems to be the vent for a very feeble discharge of marsh gas.

The Nummulitic or Eocene group of rocks is well developed extending throughout the district as far as Puriam Point, a rocky spit running into the sea on the eastern side of the mouth of the Bassein river, but its precise extent towards the west is uncertain from its joining, if not blending with, the altered rocks of the southern portion of the Arakan hills.

While the soil of the north-east portion of the district consists of an agglomeration of clay and silt deposit, considerable deep beds of laterite covered in places with sandy deposits are met with to the north of Bassein town and to the east of Ngaputaw.

At Kyaukthaingbaw several very large masses of limestone crop out from the alluvium on the river bank. South of the village Thamandewa a tidal creek stretches for some miles into the country, and on the south of this creek the outcrop of a bed at least thirty or forty feet thick stretches across the country to the south-west for over a mile. Soapstone also is found in small quantities in the Arakan Yoma.

A general idea now prevails among cultivators in the inundated part of the district that the level of the ground is gradually rising and it has been noticed that the depth of the water in a shallow depression is becoming less, while streams like the Kyeinchaung, Zechaung and Tabu. formerly regular boat routes, are now passable only in the rains by small boats Further a great deal of land in Tabaung township formerly unculturable has now come under the plough. The idea on the other hand that the volume of water in the Ngawun has decreased is probably incorrect as the high flood levels observed at Zibyugwin, twenty miles below Ngathainggyaung, have not fallen since 1900.

Soils.

The soils of the district are dealt with in detail in the chapter on agriculture.

Climate

Like all districts lying in the delta of the Irrawaddy Bassein experiences no great extremes of temperature. The surface of the country is intersected by a vast number of creeks, the muddy banks of which are left exposed for the greater part of the twenty-four hours, and there are also numerous lakes and tanks. An equable and humid temperature is the result, and the climate tends to be at all times relaxing and is especially so during the monsoon with its heavy rainfall. During the month of February fog is not uncommon *in the mornings*.

Rainfa

Rainfall and temperature observations have been regularly recorded since 1876 at Bassein which was one of the three observatories properly supplied with instruments in that year. Rainfall observations are also taken at Ngathainggyaung, Kyonpyaw, and Ngaputaw.

There are usually a few showers in April and heavier rain in May, but from the breaking of the regular monsoon which sets in with more or less violent atmospheric disturbances generally at the end of May or beginning of June up to the end of September rain is almost continual, the average number of rainy days for the months of June, July, August and September over a period of twenty years being at Bassein 22, 25, 24 and 19 days respectively. The average number of rainy days in the year and the average rainfall for the year over a period of twenty years, 1894 to 1913, were as follows:—

	Rainy days.	Rainfall in inches.
Bassein ...	... 117	106
Ngathainggyaung	... 108	96
Kyônpyaw ...	... 105	103
Ngaputaw ...	... 126	118

These figures agree well with the average of 102 inches recorded for Bassein between 1867 and 1876.

The records show some remarkable variations: thus the highest recorded rainfall at Kyonpyaw was 187 inches in 1907, at Kangyidaung 166 inches in 1895, at Bassein 141 inches in 1896. The lowest recorded rainfall at Kyonpyaw was 70 inches in 1894, at Kangyidaung 76 inches in 1911, and at Bassein 84 inches in 1906.

It is however doubtful whether the figures given for Kyonpyaw in 1907 are reliable, as Ngathainggyaung, only ten miles away, returned its rainfall as 99 inches in the same year. The rainfall on the west of the Yomas is not recorded but it probably approximates closely to that of the Gwa township of Sandoway with its normal rainfall of 175 inches.

In the months June to September breaks of more than one or two days are unusual, but in October with its average of twelve rainy days there are not uncommonly breaks for as long as ten days. Towards the end of October the wind shifts round to the north-east, there is much thunder and lightning and occasionally strong hurricanes with cyclones off the coast, and by the first week or so in November the rains have ceased, the wind veering round to the eastwards cools the atmosphere and the cold season sets in: this gradually passes, without any such violence as marks the beginning and end of the rains, into the hot season, having usually lasted till about the early part of February: the early mornings remain chilly for some time longer.

npera-
e.

Owing to the presence of moisture in the atmospheer the temperature shows no considerable variations. The mean maximum and minimum temperature of the month of December recorded for five years from 1909 to 1913 were 84° and 65°: in the hottest month—April—these had risen to 94° and 76°. After the rains have well set in the temperature drops and the averages for July over the five years are 84° and 76°. The range of temperature is thus ordinarily small, though hot periods are not uncommon in April: the highest recorded temperature in the five years was 102° in April 1912 and the lowest 58° in December 1913. Though the temperature seldom rises above 100° the humidity makes the heat very trying.

ail-
inds.

From the beginning of the monsoon in June to the end of September the prevailing winds are south-west, from October to May north-east. These vary little except at times of local disturbance of the atmosphere.

It is not likely that the district ever abounded in game: flat and swampy as it mainly is, with most of the rivers and creeks tidal, animals must always have had to take refuge in the rains on the comparatively small areas of high ground where they could easily be hunted down. Yet before the making of the Ngawun embankment the low lands which slope into the Arakan Yomas from the right bank of the Ngawun must have harboured wild animals. With the extension of cultivation on the east, the flooding of the land on the west of the Ngawun, and the ruthless way in which hunters, especially the Karens, destroy regardless of sex, wild animals have been steadily and rapidly thinned so that there are now few east of the Arakan Yomas. The district being typically deltaic in the east and in the west similar to the Arakan Districts has no fauna peculiar to itself. Elephants still remain in numbers on the Yomas and wander from the north of the district as far south as Negrais, occasionally venturing into the cultivated lands near the hills and destroying the paddy. **Fauna.**

The rhinoceros was formerly not uncommon on the west coast and in the low hills but has been nearly exterminated though a few are still said to remain on the most remote spots on the west coast. One species only is known, the Ceratorhinus Sumatrensis (*kyan shaw*), the ordinary two-horned rhinoceros of Tenasserim. The high local value said to be as much as three hundred rupees for the skin, horns, blood and flesh, on account of their reputed medicinal qualities, caused them to be ruthlessly pursued. **Rhinoceros.**

The bison (bos gaurus) is becoming rarer, but a fine specimen was shot as recently as June 1914. **Bison.**

The tiger (felis tigris) is found now only in the hills to the west of the Ngawun, but he is far from numerous and rarely becomes a man-eater. Leopards are not uncommon especially near Kanyingyaung and Zigyaing and do a lot of damage by carrying off calves and young cattle. **Tiger.**

The common black bear is still to be found at Chaungtha. **Bears.**

The sambhur (Rusa Aristotelis) is found in the western hills near Negrais. **Sambhur.**

Of the other animals wild pig (Sus cristatus) are plentiful in the great *kaing* grass areas near the low hills, hog deer (Hyelaphus porcinus) and barking deer (Cervulus aureus) are to be met with here and there in many parts of the district, and hares (Lepus Peguensis) are common in places. Flying foxes (Pteropus Medius) swarm in Bassein town and their flesh is considered a great delicacy by

Burmans and Indians. They are said to cause great injury to trees as they never leave a tree on which they have once settled.

irds. Of game birds ducks of many varieties are found; the commonest are the spoon bill, spot bill, and canvas back: whistling and cotton teal are also common. In the marshes snipe and golden plover are well scattered all over the district, imperial, blue and green pigeons are to be found everywhere, and the jungle fowl is no less ubiquitous. The district is rich in many species of birds, most common of which are the paddy bird, the crow and the mynah. The graceful heron, the many-hued kingfisher, the king crow, and the bee eater are hardly ever missed in the shortest walk. During the monsoon large flocks of a stork with a tufted head fly in a V-shaped formation along the course of the main rivers and settle on marshy lands far away from habitations.

eptilian auna. rocodi-s. Of the order Crocodilia crocodilus porosus which attains a considerable length is said to have abounded formerly. They may still be seen in numbers at Enterprise Island. Regular steamer traffic however seems here as in other parts of Burma to have driven them away from their haunts, though one was shot near Ngathainggyaung in 1914. Of tortoises (Batagur) two estnary varieties known to the Burmans as '*taikleikbein*' and '*taikleikset*' are found in the extreme south. Of turtles four marine varieties are known—the Green turtle, Loggerhead, Hawk's bill, and Leathery turtle. Vast numbers of the eggs of the green turtle (Chelone Mydas) and the Loggerhead (Thalassochelys Caretta) are taken yearly at Diamond Island. All the lizard families are well represented.

nakes. Snakes are neither numerous in numbers nor in species. Of poisonous snakes the Russell's viper (Daboia Russellii) is the most dreaded. Formerly little known it has of late years become a serious nuisance in the north-east of the district where it has said to have crossed from Ma-ubin District.

The Cobra and Krait families are known, and near the sea coast the Hydrophidæ are particularly dangerous. Of non-poisonous snakes the rat snake is as everywhere the most common, and the python is now rare except in deep jungle.

h. The tidal creeks, rivers and tanks all abound in fish which are taken in great quantities and sold fresh, smoked, dried, or made into *ngapi*. There are over fifty species of fish found in the district but nine species largely predomi-

nate: they are *Ngapyinthalet* (Trichogaster fasciatus), *Ngamyitchin* (Labeo rohita), *Ngabebyu* (Amblypharyngodon mola), *Ngakonmamigwet* or *Ngabuzi* (Barbus stigma), *Ngavanauk* (Ophiocephalus Striatus), *Ngayangaungdo* or *Budo* (Ophiocephalus Gachua), *Ngabyema* (Anabas Scandens—the climbing perch), *Ngaku* (Clarias Magur), *Ngagyi* (Saccobranchus fossilis).

East of the Ngawun the district is now practically one vast paddy plain but there are still large areas of reserved and unreserved forests to the west. Below Ngathainggyaung to the west is the flooded country covered with tall thick *kaing* grass or with characteristic dwarfed and thorny vegetation. In the low hills bamboos predominate: they are almost all of the common varieties, but the thorny *Kyakat* (Bambusa Spinosa) is found in quantities in the deep alluvium. Near the sea and the estuaries of the rivers the flat muddy shores are occupied by mangrove forests. On higher ground the *Pinle Kanayo*, Avicennias, and Acanthus Ilicifolius are met with: in the higher belt which stretches at an elevation of a hundred to fifteen hundred feet from Pagoda Point to the north of the district appear the *Taungthayet*, *Kanyin*, and *Kanyaung*, and occasionally *In*, *Pyinkado*, *Pyinma*, and *Thitkado* also occur, *Pyinkado* mainly in the plains and low foot hills, the other kinds in the Yomas where the forests are of the moist type. With a normal rainfall of over a hundred inches vegetation is everywhere abundant and any piece of ground left uncultivated for a year or two is quickly covered with grasses and shrubs of a great variety of species. **Forests.**

CHAPTER II.

HISTORY AND ARCHÆOLOGY.

Early history—The sixteenth century—Ralph Fitch in Burma—The Dutch Settlement—The British Settlement—Conquest by Alaungpaya—Massacre of the British at Negrais Island—The first Burmese war—The second Burmese war—The History of the district since the annexation—Shwe Pu and Kyaw Zan Hla—Karen rising—Nga Kyaw Tha—Dalhousie—The third Burmese war—Archæological remains.

Very little is known of the early history of the district. What has been claimed as the first mention of it occurs in **Early history.**

the works of the geographer Ptolemy who refers to the river Besynga. Colonel Yule in his "Mission to Ava" says:—"In his sketch of the hydrography of India beyond the Ganges the geographer (Ptolemy) says distinctly, 'From the range of Moendrus flow down all the rivers beyond Ganges until you come to the river Besynga.' This remark seems infallibly to identify Mons Moendrus with Yoma-daung, the great spinal range of Arakan, and the river Besynga with the Bassein branch of the Irrawaddy." This claim, however, is not universally admitted, although the weight of the evidence appears to be in favour of it. In the old Talaing histories the thirty-two cities of Bassein are mentioned in accounts of the reign of Katha Kumara, King of Pegu, who reigned from 592 to 599 A.D. Subsequently Bassein became one of the scenes of the constant struggles between Talaing and Burman. In 1286, when the Chinese invaded Burma, defeated the Burmese army at Male, destroyed Pagan, and marched south, Narathihapadi, the last King of Pagan, who is known for all time as the *Tayok Pyemin*, the king who ran away from the Chinese, fled to Bassein, which appears to have been part of his dominions, and lived there for five months. He was poisoned at Prome on his return towards his capital. In 1289 Bassein again passed to the kingdom of Pegu. When Wariyu made himself King of Pegu, after murdering the Pagan King Tarapya, and defeating the Burmese at Dala, Bassein remained an independent principality beyond the sphere of his power, the headquarters of which was at Martaban. We find, however, that a nephew and successor of Wariyu, a Peguan king who died in 1330, put down a rebellion in Bassein, but it is not clear when the delta west of Rangoon was added to the Peguan dominions. Pegu and Martaban subsequently became separate kingdoms, and in 1385 Razadhirit ascended the former throne. During his reign the governor of Bassein, one Soukbya, revolted and called in the King of Ava, who in two successive years invaded the country, but was beaten off on both occasions despite the co-operation of Soukbya. Razadhirit then attacked Bassein, but failed to take it. After several reverses, however, he was successful in 1390, and captured Soukbya himself. In 1410 the Burmese again invaded, but failed to take either Bassein or Myaungmya.

The sixteenth century.

In 1536 Tabinshweti, King of Toungoo, took Bassein, Rangoon, Myaungmya, and other places, and became King of Pegu, Prome, and Martaban. He also invaded Arakan

and Siam with some success, but after ten years as King of Pegu he was killed and anarchy supervened. Tabinshweti's general, Bureng Naung, who had retired to Toungoo, now vindicated his claim to the throne. Having secured Toungoo, Prome, and all the country up to Pagan, he took possession of Pegu in 1551. In the following years he established a Burmese empire which extended from the Arakan Yomas to the capital of Siam, and was about to add Arakan to his dominions when he died in 1581. He was succeeded by his son Nanda Bureng, whose ill-directed attempts upon Siam led to the disruption of the empire.

Ralph Fitch in Burma.

It was in Nanda Bureng's reign that the first Englishman set foot in Burma. This was Ralph Fitch, whose narrative appears in Haklyut's Voyages. His port of arrival in Burma was evidently Bassein, for he says: "We entered the barre of Negrais, which is a brave barre and hath four fadomes of water where it hath least. Three days after we come to Cosmin, which is a very pretie towne, and standeth very pleasantly, very well furnished with all things. The people be very tall and well disposed, the women white, round faced with little eies: the houses are high built, set upon great high postes, and they go up to them with long ladders for fear of the Tygers which be very many. The country is very fruitful of all things. Here are very great figs, oranges, cocoes, and other fruits. The land is very high that we fall with all, but after we be entered the barre, it is very low and full of rivers." Fitch went from Bassein or Cosmin to Pegu by river. In his account of the trade of the country he says: "The ships which come from Bengala, San Thome, and Masulipatam, come to the bar of Negrais and to Cosmin." The chief port for the southern trade was Martaban. The only Europeans who appear to have had any footing in Burma previously were the Portuguese, who were merely mercenaries and adventurers.

The Dutch settlement.

At the beginning of the seventeenth century (1627) the Dutch are supposed to have been in possession of the Island of Negrais, otherwise known as Hainggyi. Dalrymple in his "Oriental Repertory" says, "On some dispute with the Burmese Government, the Dutch threatened, if they did not even attempt, to bring in the Chinese, this very justly gave umbrage to the King of Burma, who immediately turned both English and Dutch out of his dominions; many years elapsed before the English could obtain leave to return, and the Dutch never were readmitted."

The British settlement. The first known connection of the British with the district was in 1687 when Captain Weldon took possession of Negrais in the name of the East India Company, destroyed a few huts and hoisted the British flag. No attempt to form a settlement appears to have been made until 1753, when Mr. Hunter was sent in charge of an expedition and settled on Negrais. He died shortly afterwards and was succeeded by Mr. Burke.

Conquest by Alaungpaya. This was the period of the short-lived triumph of the Talaings which immediately preceded the conquests of Alaungpaya and the final subjugation of the Talaing by the Burman. In 1755 Alaungpaya's advance guard reached Bassein, which was abandoned by the Talaings. At this date there was an English settlement in Bassein itself, and Captain Baker, who was at the head of it, sent a mission to Alaungpaya in reply to a request for assistance against the Peguans. During the absence of the mission Bassein was reoccupied by the Talaings. Shortly afterwards the Talaings were utterly defeated, and Bassein was retaken and destroyed by the Burmans, who, however, respected the East India Company's factory and property. Captain Baker proceeded to Ava towards the end of 1755 and obtained a grant of ground for the factory in Bassein.

Massacre of the British at Negrais Island. In 1757 at the invitation of Alaungpaya Ensign Lister was despatched to meet the king near Prome and negotiate a treaty, which was concluded and provided for the grant of Negrais to the British in perpetuity and the grant of land for the Bassein factory. In 1759, however, the establishment was withdrawn from Negrais with the exception of a few persons to look after the company's property and hold the island. Captain Southbey was sent from Madras to superintend this detachment. He landed on October 5th, and on the 7th when all the Europeans were collected to meet the Burman authorities he and all his companions, except one midshipman who escaped, were treacherously massacred. This was supposed to be in revenge for assistance given by the British in Rangoon to the Talaings. In 1760 Captain Alves, the commander of the vessel which brought Captain Southbey to Negrais, was sent on a mission to Alaungpaya's successor to demand redress for this outrage, but all he could obtain was the release of certain prisoners, confirmation of the grant of land at Bassein, and a definite refusal to permit the British to return to Negrais, the last a direct violation of the treaty with Ensign Lister. In 1804 Bassein was the scene of one of the numerous outrages committed by the Burmese on British subjects. A

British ship put into the Bassein river for wood and water whereupon the mate and a passenger who went on shore were detained by the Governor, to induce the captain to deliver up public despatches. At the mate's instance the captain refused and put to sea, and after a month the captives were released and permitted to find their way back to Bengal. No further attempt had been made, despite the grant of land in Bassein of which the British did not make use, to maintain a settlement in the district, which next figures in Anglo-Burmese history on the outbreak of the first Burmese war in 1824.

The first Burmese war.

On his way to Rangoon Sir Archibald Campbell dispatched part of his force under Major Wahab to take Negrais. The island was found to be uninhabited, but a stockade had been erected on the opposite mainland and this was captured without much trouble, after which the detachment proceeded by sea to Rangoon. In February 1825 a column of 800 men under Major Sale of the 13th Light Infantry was dispatched from Rangoon to take Bassein and clear the country from there to Henzada. On reaching Pagoda Point stockades were discovered on the island of Negrais. These were taken and destroyed, after which the fleet proceeded up the river. On arriving at Bassein the town was found to have been fired and deserted, the enemy having retreated to Lemyethna. Two hundred men of the 13th Foot and a hundred Native Infantry under Major Sale then proceeded up stream, but encountered no opposition, and on arriving at Lemyethna discovered that place also abandoned, so returned to Bassein. The operations towards Henzada having meanwhile proved unnecessary, the force under Major Sale was recalled to Rangoon, but Bassein continued to be occupied during the war.

The second Burmese war.

In the second Burmese war, after the capture of Martaban and Rangoon, General Godwin turned to the capture of Bassein with a view to seizing the whole coast line and preventing any attack on the southern portion of Arakan. He accordingly left Rangoon with 400 men of the 51st King's Own Light Infantry, 300 men of the 19th Madras Native Infantry, and details of sappers and artillery in the "Sesostris," "Mozuffer," "Tenasserim" and "Pluto" commanded by Commodore Lambert, and arrived off Bassein on the 18th April 1852. The capture of the town is thus described by General Godwin:—"The enemy looked at us, but did not show any disposition to attack. The flotilla arrived at the left of their position, a strong well built mud

fort, armed with cannon and men. This we passed within two hundred yards, and so in succession all their defences for nearly a mile. Immediately the steamers took up their position, the troops were ordered to land, and nearly all the men of the 51st Foot landed before a shot was fired: the enemy were so completely surprised and paralysed by our approach. A pagoda in the centre of the line was stormed by a party of the 51st Foot under Major Errington, and immediately after moving to their right they came upon the mud fort, which was obstinately defended, but was carried at the point of the bayonet, and in forty minutes the whole position was in possession of our troops. Whilst the works on the left bank were being attacked, Commodore Lambert landed on the right and captured and destroyed a stockade mounting six guns." Our total loss was three killed and thirty-two wounded. Leaving a garrison of two companies 51st King's Own Light Infantry, 303 men 9th Madras Native Infantry, and two 12-pounder howitzers under Major Roberts, General Godwin then returned to Rangoon. With the annexation of Pegu the district became part of the province of British Burma

History of the district since the annexation.

The district which was placed under a Deputy Commissioner, was at the time of the annexation in a state of anarchy. The British troops were confined to the limits of the seaport towns and frontier stations, while in the interior a sort of civil war was waged between those who were hostile to the British occupation or looked to plunder for profit, and those who had any way sided with us. Villages on the river banks were destroyed merely because fuel had been supplied by them to the steamers. The numerous dacoit leaders of course claimed to be officers of the Burmese Government deputed to recover the country. The first and most pressing need was to afford protection to the people and restore confidence, as the country was without local officials, owing to the fact that none dared to accept office under the new government. In January 1853 Captain Fytche, the Deputy Commissioner, dispersed a force which had kept the whole south and south-east of the district in a state of terror. He attacked it on Negrais Island, where it had landed to plunder the village of Hainggyi, and followed it up northwards into the Shwelaung township, destroying the three large villages in which it had made its headquarters. Immediately afterwards Captain Fytche proceeded up the Daga river with a party of seamen of the steam frigate "Zenobia" under Commander Rennie of the Indian Navy, one or two guns, and a Karen levy and routed a

force under three Burman leaders with considerable loss, driving them northwards to join another chief Mingyi Maung Nyun, the former Governor of Bassein. A few days later this force also was utterly defeated, the Mingyi's two sons were captured, and the Mingyi's corpse was found shortly afterwards in the jungle. The lower part of the district was now pacified, but in the north one Nga Myat Tun still held out. He was finally defeated and his party broken up by Sir John Cheape operating from the Henzada side, and Major Fytche, who had received a brevet majority as a reward for his services, and Captain Rennie from the south.

Shwe and Kyaw Zan H

In January 1854 two men called Shwe Pu and Kyaw Zan Hla appeared from Ava and issued a proclamation to the effect that they had been appointed Governor of Bassein and Commander-in-Chief respectively and commissioned to drive out the English. Aided by a 'pongyi' of the district, they assembled a large number of desperate characters and suddenly seized the towns of Daunggyi, Ngathainggyaung, and Yegyi. This success emboldened others to join them, including one Nga Tha Nu, formerly Royal Steersman of Yegyi, who had fled to Ava but had returned and was living on parole. The upper part of the district fell at once into the hands of the rebels. Major Fytche moved up the river with a force of Europeans and Madras Native Infantry and four hundred of the inhabitants of the country, and encountered the enemy advancing on Bassein, some three hundred strong on the right bank and eleven hundred in two parties on the left. The force on the right bank at once retreated to Ngathainggyaung on the approach of a detachment under Major Baker. Those on the left bank were attacked and driven into Pandaw, but evicted from there and the village occupied. An attempt by Shwe Pu to surround Pandaw by night was frustrated by the Burmese pickets. In the morning his position was attacked, and after a short struggle his force broke and fled, and the British moved on to Ngathainggyaung, being joined there by Major Baker's detachment, and also by a force of Burmans which had been sent to attack another rebel leader and had brought him in captive. Meanwhile another party had attacked the rebels at Daunggyi, but had been defeated with heavy loss and was being pursued. Major Fytche thereupon followed with his force, and, overtaking the rebels while at their food, totally defeated them. The leader escaped for the moment, but was captured while crossing the Bassein river. In answer to the first news of the outbreak a detachment had been sent under Lieutenant

Shuldham, 26th Madras Native Infantry, from Rangoon. This officer encountered and defeated a rebel party at Myaungmya, the leader being killed in the pursuit. By these decisive measures the outbreak was speedily crushed. To quote the official report:—"The Bassein district was cleared of the remnant of Burmese troops and of numerous marauders by the gallant exertions of Major A. Fytche."

aren sing.

In 1857 an outbreak occurred among the Karens led by a man who was connected with a leader of the Karen rebellion then going on in the hill country of the Shwegyin district. The rebels occupied Myaungmya, but fled on the approach of the Deputy Commissioner and were overtaken and dispersed. They reassembled in Wakèma, but were there attacked and finally defeated, forty of them being taken prisoners. The leader escaped, but was captured later.

ga yaw ha.

In 1868 occurred a disturbance in the town of Bassein. Nga Kyaw Tha, an Upper Burman who had lived some four years in Bassein, aided by a soothsayer, Nga Shwe Wa, and a petty local official, secretly enlisted some fifteen or twenty men, whom he persuaded by means of forged documents that he had been appointed Prince of Bassein by the King of Burma. Before daylight on April 27th he and his followers and about a hundred up-country men from the rice mills, who seem to have joined at the last moment, went to the pagoda in the fort, and, after worshipping, suddenly rushed the treasury guard. The Deputy Commissioner speedily arrived with about fifteen policemen, and on their firing the robbers fled after being in possession of the treasury only about twenty minutes and without having even opened the doors. Nearly all were captured the same day, except Nga Kyaw Tha, who was caught in Rangoon two months later. From this time until the outbreak of the Bogale rebellion simultaneously with the guerilla warfare in Upper Burma in 1886 the district enjoyed uninterrupted peace.

al- usie.

Shortly after the annexation it had been proposed to shift the headquarters of the district from Bassein to what was considered as more suitable site nearer the mouth of the Bassein river, "a position unrivalled as a port in the Bay of Bengal."

In 1855 all the preliminaries had been completed, the main roads traced out, the site of public buildings determined, and the construction of a pier begun. The crest of a rock was levelled for the erection of a battery to command the river, and the blocks and allotments of the town were

marked out. In 1856-57, however, the site was completely submerged by a sudden rise of the sea consequent on a cyclone, almost every building was swept away, and a few lives were lost. Nevertheless the idea was not abandoned, and the courts and gaol were actually transferred there from Bassein, but were retransferred within the year, thus terminating the brief career of the town of "Dalhousie," as it was called, which speedily relapsed into its former state of jungle. The remains of the buildings are still to be seen on the site.

The third Burmese war.

The period of the third Burmese war was marked, as elsewhere in the lower province, by a general outbreak of dacoity and crime throughout the district. The Ngathaing-gyaung subdivision shared with Henzada district the distinction of being one of the most disturbed parts of the country. The area between Kyonpyaw and Kankat was the headquarters of numerous dacoit gangs, which operated in both districts. Many of the Henzada dacoits hailed from Lemyethna, and generally speaking the character of the outbreak in the north of the Bassein district was more distinctly political than any that had occurred in the Irrawaddy Division. The Deputy Commissioner, writing in the early part of 1886, describes the district as entirely out of hand, the judiciary and police as swamped with the extra crime, and a large number of the people as in expectation that British rule would soon be at an end. The most serious of the troubles began on February 12th, 1886, when what became known as the Bogale gang of dacoits attacked the Bogale police-station and murdered the 'Penin.' On the 18th and 19th February an attack on Pyinkayaing was frustrated by the Deputy Commissioner, Mr. St. Barbe, and Mr Anthony Murphy of the tug "Albert," but the dacoits got away to Long Island and subsequently to the mainland. On the 22nd Mr. St. Barbe, Mr. Murphy, and some fifteen men proceeded by sea to Ngayokkaung in pursuit. They landed near Bamaw village, and a guide was sent to seek information. He disappeared, and his corpse was subsequently found hacked to pieces in the jungle. On Mr. St. Barbe approaching the jungle he was met by a volley, and retreated to the boat pursued by the dacoits. "They did not fire on us until we were about thirty yards away," says Mr. Murphy in his account of the incident, "when, soon after, some of the dacoits came on the beach to the front, fixed tripods or rests for their guns, and every shot fell close to us or passed whizzing by; some time after Mr. St. Barbe's peon was shot, death instantaneous, then Mr.

St. Barbe himself was shot and he said, 'I am shot, Mr. Murphy, I am dying.' He did not speak any more. Soon after I received a shot in my right thigh." Eventually the four survivors of the landing party succeeded in launching their boat by taking to the water and keeping her as a shield from the fire of the dacoits, and got away without further casualties. Mr. Murphy was subsequently presented by the Chief Commissioner with a double-barrelled rifle in recognition of his gallantry on this and other occasions. Meanwhile Bassein town had been depleted of police to deal with the numerous dacoits gangs in the district and members of the volunteer force were being employed on the treasury and main guards when on the 20th February H.M.S. "Ranger" arrived in the port. Bluejackets were at once landed to police the town, and a detachment under Lieutenant Macdonald was despatched immediately on receipt of the news of Mr. St. Barbe's death to intercept the dacoits in the event of their crossing the Yomas by the Ngakwa pass. They arrived at Ngakwa too late to effect this, but rendered valuable service in pursuing a large gang which subsequently came over the pass and which they followed up as far as Lemyethna. Before the ship left the bluejackets rendered further service against dacoits in the neighbourhood of Kyonpyaw and Lemyethna. By the month of April 1886 the Bogale gang was being hard pressed, was twice defeated in the Prome district, and was finally broken up at Padaung.

With the disposal of this gang, however, the troubles were by no means over. Smaller gangs were still harassing the district, and in one week of September 1886 there were eight dacoities in the neighbourhood of Lemyethna alone. The break-up of these gangs swelled the numbers of the prisoners which embarrassed the inadequate police force. A serious outbreak in the Bassein Jail was only quelled by the presence of mind of the Superintendent, Dr. Dantra, and his assistant Mr. Harrison, while escapes from police custody were not infrequent.

The year 1887 thus dawned with the district still in a very unsettled condition. Zawgyi Ro, Saya Kyin, and San Gyaw in the Lemyethna township, and Yaung Gyi and Po Si in Kyonpyaw kept the north of the district disturbed, but the notorious Nga Kye, whose name inspired terror from the sea up to Ngathainggyaung, and for whom a reward of Rs. 2,000 had been offered, had already been captured by the Karen levy. His lieutenant was killed early in the year, and his gang, which had been operating

in unpleasant proximity to Bassein and Padauk and had on one occasion attacked and driven back a body of police by night, was dispersed.

The remaining bands were too small and elusive to be satisfactorily dealt with by the military, of which there were several detachments from the 7th Bombay Infantry scattered about the district as well as in Bassein and Ngathaing-gyaung. Guns were issued to stockaded villages, a Karen levy was enrolled, fifty of whom were selected for active service and operated between Bassein and Thabaung, and there was also a Karen water militia which patrolled between Bassein and Ngaputaw, Myaungmya and Kanywa, Pebin and Thigwin, for the protection of paddy boats. Boat traffic up the Daga and Ngawun rivers was conducted by means of bi-weekly convoys under launch or boat escort. The Karen levy, as already mentioned, rendered good service, but were more useful for purposes of protection than satisfactory in the field. They were not amenable to discipline, and ammunition had to be issued to them with a sparing hand owing to their unsteadiness in the use of it. Nevertheless their services were of considerable value, and formed a welcome contrast to the supineness and cowardice of the Burman portion of the population. It is of interest to note that the Revd. Mr. Nicholls, who is still at the head of the Sgau-Karen Mission in Bassein, personally headed the Karens in an attack on the Bogale insurgents while they were ravaging the Thabaung Township in 1886.

Towards the end of 1887 the Karen levy was disbanded as the district was gradually brought to hand and peace succeeded the troubles of the past two years. No serious disturbance has since ruffled the peace of the district and its development has followed a normal course, as will be seen from the description of each of its activities in the following chapters.

Archæological remains.

The important pagodas and the remains of some old cities are now the only objects of archæological interest. Of the pagodas the Shwemoktaw in Bassein town is the best known. Tradition says that it was constructed on the 15th day of the waning moon of Tabaung in the year 19 B.E., shortly after the death of Gaudama, by Asoka. It was at first only five cubits high and was called the Shwe Ana. In the year 38 B.E., the King of Paukkon or Pagan, Narapadisithu, raised it to a height of fifteen cubits, and changed its name to Tupayon. Again in the year 600 B.E. the King and Queen of the Talaings, who were known as

Thamokdagawtha and Onmadandi, aided by a pongyi named Thawnoktaramati, rebuilt it under its present name.

Of the Tagaung Pagoda in Bassein Town very little is known except that about the year 600 B.E. it was known by the name of Mingalazedi : it is said to have been built by King Thamokdagawtha and his Queen.

This King and Queen too according to tradition built the Mahabawdi Pagoda which stands at the western corner of Bassein town and still retains its original name.

In Kyonpyaw subdivision are traces of the ruins of several ancient cities, Mèlaung, Myogon, Taunglon, Athok, Pandaw, and Thidamyo. Tradition says that Tamokdagawtha and Onmadandi, the Talaing King and Queen of Bassein, were about 600 B.E. attacked by the Princes of Rangoon, Syriam and Pegu and compelled to retreat to Mèlaung. After three years they were attacked by the same princes, fled to Pandaw, and had to retreat to Athok and Thidamyo. Mèlaung is entirely in ruins and the wall or embankment, which had eight gateways and was fifteen to twenty feet high, has large trees growing on the tops and sides. Bricks are found but no solid masonry is left.

The ruined wall of Athok is semi-circular, it runs from the river bank north, turns round to the west, and meets the bank of the river again. Here there were three walls running parallel, the centre low from six to eight feet high, and the outer and inner ones nearly twenty feet high and from one hundred to three hundred feet apart, with gateways near the north end of the wall.

In Kyonpyaw subdivision too are the ruined traces of the city of Kèbaung which, tradition says, was built in the year 1115 B.E. by King Alaungpaya and called Anandapura : it was called Kèbaung after its ruin.

CHAPTER III.

THE PEOPLE.

Population— Rate of increase— Sex — Density— Towns— Races— Talaings — Burmans— Villages — Houses—Clothing —Food — Rise in prices—Religion — Buddhism —Christian Missions— Karens — Chins —Shans—Arakanese—Chinese —Indians.

pula-n: It is difficult to form any accurate idea of the population in early times, though it is probable that Bassein like Pegu

and the delta in general had contained a large population and considerable towns. Whether the Cosmin mentioned by Ralph Fitch was Bassein or not it is certain that Bassein enjoyed considerable trade, particularly with Ceylon, and that it had suffered severely from the continual wars and oppression which characterised the history of Lower Burma from the seventh to the nineteenth century. After the British occupation the population rapidly increased and this increase has been steady and continuous ever since. From 202,428 in 1872, the population of the 4,127 square miles which now make up the Bassein district increased to 268,169 in 1881, 320,973 in 1891, 391,427 in 1901, and 440,988 in 1911. The separate races were as follows :—

Year.	Burmese and Talaing.	Karens.	Indians.	Others.	Total.
1901	276,582	85,300	19,027	10,578	391,427
1911	314,329	97,906	19,936	8,817	440,988

Rate of increase

In 1852 the area of cultivated land in the district was comparatively small, but as the country quieted down an especially after the construction of the Ngawun embankment, immigrants mainly from Upper Burma were very numerous ; the Karens, who under the Talaing and Burmese administration had retired to the foot of the Arakan Yomas and the thick jungle tracts to the north of the Bassein district, under British rule came down to the plains round Bassein, and the natural rate of increase of the indigenous population rose. During the period 1872 to 1901 large tracts of Lower Burma were virgin country in a state of rapid colonisation. Thus the rate of increase between 1872 and 1881 was 32 per cent. The next decade, as the period of the annexation of Upper Burma and the troubles that followed, naturally shows a smaller ratio of increase, 19 per cent.; this increased in the decade 1891 to 1901 to 22 per cent., but in the latter part of that decade immigration declined, as the district was not considered by the Upper Burman to offer him the same chances as the new land then being opened out in Myaungmya and Thongwa. The district had in fact by that time no great area of good waste land to offer to immigrants and the rate of increase

naturally dropped to 13 per cent. for the years 1901 to 1911.

ex. Of the 440,988 people in the district in 1911 226,773 were males and 214,215 females. Bassein town had 24,246 males against 12,835 females, due to the fact that it has a large and floating population of natives of India. In the other towns and rural areas the disparity between the numbers of males and females is small.

ensity. The great bulk of the population lives in the wide strip of land roughly ten miles to the west and fifteen miles to the east of the railway line from Bassein town to the north of the district. The density increases in the north and in Bassein rural area—excluding Bassein town—the average density per square mile is 175, as against 212 in Kyaunggon, 230 in Ngathainggyaung, and 283 in Kyonpyaw, while the western township Thabaung has but 38 and the southern township Ngaputaw but 32 persons to the square mile. Both the latter townships of course have large areas to the west where the final spurs of the Arakan Yomas are entirely uninhabited. The mean density per square mile for the whole district was 49 in 1872, 65 in 1881, 77 in 1891, 94 in 1901 and 107 in 1911. But for the large mountainous areas the density in Bassein district would surpass the density of Myaungmya (127) and approach that of Ma-ubin (185). It is not likely that the density will increase largely in the immediate future, as almost the entire population is directly or indirectly agricultural and the area of fertile waste still available is restricted. In the more prosperous tracts there are large and wealthy villages, thus in Kyonpyaw township (excluding Kyonpyaw town) 77 out of the 118 village-tracts have more than 100 houses, but in Ngaputaw the number is only 29 out of 110. Out of the 632 village-tracts in the district no less than 53 have over 1,000 inhabitants and the prosperity of the north-east is shown by the fact that out of the 53 no less than 25 are in the Kyonpyaw township.

owns. Bassein town with 6,024 houses had in 1911 a population of 37,081 : the increase has been great in late years as the number was 22,417 in 1876, 30,177 in 1891, and 31,864 in 1901. The only other towns with over 5,000 people are Ngathainggyaung and Kyonpyaw with 7,182 and 5,429 people respectively.

aces. Of the 440,988 people in the district 311,458 are Burmese, but there is also a large Karen population, the Sgau and Pwo Karens numbering 97,906. Arakanese, Talaing, Chin, and Shan make up 8,150 and the rest are

Hindu castes 11,822, Musulman tribes 8,114, Chinese 2,758, Europeans 460, Anglo-Indians 53, and others 267.

Though Talaings are given as only 2,871 there is little if any distinction recognized between the Burman and Talaing. The inhabitants were originally chiefly Talaings, but, about the middle of the 18th century, the Talaing kingdom was conquered by the King of Ava and a large Burmese element introduced into the country: the Talaing language was then discouraged by the Burmese. But it was not till the retirement of the British from Pegu in 1826 that its use was absolutely proscribed. The spirit of the Talaing had been crushed and for long he scarcely resisted absorption by the Burmese so that the fusion between the Burmans and the Talaings has gone on for more than a century, and the people now found in the Bassein district chiefly belong to this Burman-Talaing race. There are now few pure Talaings left and their language has almost died out, except in a few villages on the sea coast. **Talaings.**

The great majority of the population are Lower Burmans, but between fifteen and twenty years ago there was a considerable influx of permanent settlers from Upper Burma mainly from the Shwebo, Meiktila, Myingyan, and Upper Chindwin districts. They established themselves principally on the sandy upland strip of country in the centre of the Kyonpyaw township, but isolated villages composed exclusively of Upper Burmans are found also in the Kyaunggon and Bassein townships. They are still somewhat clannish and many of them maintain their connection with their native place by occasional visits. **Burmans.**

Only 24,000 of the population in 1911 returned themselves as having been born in other districts in Burma. It might therefore be expected that the Burmese immigrants of former years would have amalgamated with the Burman-Talaing population. This is in fact the steady tendency and the Burman throughout the district has now no special characteristics to distinguish him in feature, speech, customs, or dress from the vast majority of the people of Lower Burma.

The unit of administration as elsewhere in Burma is now the village-tract. Formerly large and important collections of villages were under the control of *taik-thugyis* or circle headmen, but the circles have gradually been abolished in favour of village-tracts. These consist very often of two or three villages close enough to be adequately controlled by one man and with sufficient land as a rule contained **Villages.**

in the village-tract to provide the village headman with a fair remuneration for his duties. Village sites are most frequently found along the banks of creeks where they extend in many cases in a single or double row of houses for a mile or more. Rising ground anywhere is usually taken advantage of for a village-site and it is only on such high ground that houses do not tend to be unduly cramped. The extension of cultivation in every possible direction, the careful demarcation of grazing grounds, and the natural growth of villages, often result in the crowding of many houses inside one compound which has also to accommodate buffaloes and cattle. In the rains the cultivator, whose fields are at a distance, builds a hut for himself and a shed for his cattle in the fields, but there are always a number of cultivators who remain in the village. Occasionally there are raised brick paths in the larger villages : away from these paths the condition of the village ways and compounds may be better imagined than described. None of the villages are fenced, but in the better villages each compound has its own fence. The compound of a cultivator is rarely without a shed which shelters the paddy pounding mill and the large paddy bins, if there is no proper granary, a cattle shed and a few fruit trees.

Houses. Houses are almost without exception raised above the ground : the walls are as a rule of bamboo matting with floors of plank or bamboo : they are roofed with *thetnge* and in the poorer villages near the low hills with *in* leaves which are threaded on thin laths of bamboo. The use of corrugated iron for roofing is however extending rapidly, and in every village houses with plank floors, plank walls, and corrugated iron roofs may now be found. Tiled roofs are unknown in the jungle, and teak is too rare in the district to allow of its being used for shingles. It was recorded in 1867 that there were only 29 masonry dwellings in the district, but pukka brick buildings are now common in the towns, while most of the big villages on the railway line possess one or more, generally the residences of the local money lender or paddy broker.

Clothing. The ordinary clothing of the Burman-Talaing consists of a *longyi* or waist-cloth, *eingyi* or jacket, and *gaungbaung* or head cloth ; these are of common material for working and every day wear, and the value of the three garments would rarely be more than three rupees. Reserved for religious festivals, *pwès*, and all the more important occasions are the silk *putsos* which are possessed by all except the poorer labourers, cost from Rs. 10 to Rs. 15 or

more, and do duty for two or three years. Women and children have their everyday clothes of the common type, but they too all have finer clothes, silk, satin, or if they cannot afford these, the showy cheaper materials which are to be found in every village shop and bazaar. The working clothes are still in many places woven on the household loom by the women and made up at home. In many villages the rattle of the loom may be heard and weaving is still a domestic accomplishment which is however becoming less common.

Rice is of course the staple article of diet, and, while the cultivator grows large quantities of various kinds for export for food he prefers the rice which is long in maturing and needs the best soil. This is the famous *kaukkyi* which is rarely sold. Besides this variety a glutinous rice known as *kaukhnyin* is largely consumed. Every household has its jar of *ngapi* which is generally bought in quantities sufficient for a year's consumption. All this *ngapi* is made in the district and it forms the staple condiment eaten with the rice. Dried fish, smoked fish, and vegetables of many kinds, are regularly used but beef, goat-flesh, fresh fish, prawns, fowls, eggs, and milk are luxuries ordinarily beyond the reach of the jungle people. Fruit is plentiful and plantains may be purchased cheaply anywhere at almost all times of the year. Mangoes abound at the beginning of the rains, and pineapples are very cheap in July. Jack fruit and the cocoanut are also common. In all the larger villages there are sweetmeat sellers and shops with large stocks of biscuits and condensed milk, the ubiquitous Chinaman has usually a well patronized *kaukswè* or teashop, and the native of India sells coloured drinks and cheap gewgaws. Food.

Along with the rise in the standard of living there has been a more than proportional rise in the prices of food. Not only are the prices of paddy and rice high and subject to great variations but such necessaries as *ngapi*, fish, and oil have risen enormously. The rise has been most pronounced in the last ten years and the prices of 1905 compared with those of 1913 show that while sugar has fallen, and jaggery and salt remained stationary, *ngapi* has risen 25 per cent. and sessamum oil over 40 per cent. Rise in prices.

Formerly too bamboos, firewood, thatch, vegetables, and fruits, could be obtained for little or nothing: now they have to be bought and are steadily rising in price.

Buddhism is the creed of 391,027, out of the 440,988 people in the district. The number of Buddhists per Religion. Buddhism.

10,000 of the population was 8,663 in 1881, 9,141 in 1891, 8,892 in 1901, 8,867 in 1911. The Burman population is almost exclusively Buddhist, Christian Karens and Hindus and Musulmen comprising nearly all the rest. As elsewhere in Lower Burma, every large village has one or more *kyaungs*, and pagodas. The *Shinpyu* ceremony has lost little of its force and the *kyaung* is still the school for the peasant's son. Most of the 'hpongyis' are local men, and many of them have spent years in Mandalay or some other town in Upper Burma at the feet of the more learned *sadaws* who seem in Upper Burma to retain the traditions and zeal of their order with greater force and purity. There is no local organization of the Sangha as in Upper Burma, and the authority of the 'Thathanabaing' is not recognized. Mingled with Buddhism are still traces of the 'nat' worship which had formerly so strong a hold. Now-a-days many of the superstitions have become obsolete, and even Buddhism itself is said to be more and more neglected by its nominal adherents.

American Baptist Mission to Burmans.

A mission to Burmans was begun in Bassein by the American Baptist Missionary Society in 1854 and has now two organized churches with 276 members.

Karens.

Next in importance to the Burmans are the Karens who in Bassein numbered 97,906 in 1911. They are of two kinds: the Pwo or Talaing Karen and the Sgau or Burman Karen. The Revd. S. W. Cronkhite of Bassein in a note on the Pwo-Karens says:—

"Tradition ascribes to all Karens a common origin, probably in China, whence they were driven some six centuries ago. About the separation of Pwos and Sgaus history says nothing. The Pwos call themselves the mother race, and the Sgaus the father race, legend relating that there were a father, mother, six sons and a daughter, of whom the mother and daughter were driven out as being possessed of an evil spirit, from them come the Pwos, while the Sgaus sprung from the father of the family. The Burmans call the Pwos Talaing-Karens and the Sgaus Burman-Karens. The explanation of this is supposed to be that the Pwos found themselves driven further south into more immediate contact with the Talaings, while the Sgaus were further north and among the Burmese. The Talaing was the dominant power at this time and the Pwos leaned to the Buddhism of the Talaings and preserved their allegiance even after the fall of the Talaing power. The

Pwo and Sgau dialects are parallel but mutually unintelligible, the former being, like the Pwo people, rather the more rugged. Pwo dialect is not uniform everywhere, the Moulmein variety being bewildering to a man used to the patois of the Bassein district, while that spoken across the Siam border would be unintelligible to him. Moulmein Pwo is regarded as the standard and is mainly followed in the literature prepared by the missionaries. Like other Karens the Pwos are very fond of singing, but are better in choruses than solos. The Pwos have not only adopted to an appreciable extent the religion of the Talaing and Burman, but in some districts their distinctive dress is rapidly disappearing. In the Rangoon, Henzada, and Ma-ubin districts, and increasingly in the Bassein and Myaungmya districts the new generation of Pwos is growing up to speak Burmese to the exclusion of their mother tongue. Intermarriage between the races is still relatively rare."

Karens do not amalgamate well with Burmans and prefer to live in separate villages. Family and racial ties are strong and a Karen village is a corporate entity and not a mere collection of individual houses as the ordinary village of Lower Burmans is apt to be.

Among the Sgau Karens Christianity has made striking progress. The Bassein Sgau-Karen Mission was founded under the auspices of the American Baptist Missionary Union in April 1835 by the Revd. Thomas Simons. The first Karen convert in Burma was Ko Tha Byu, a native of Bassein district and there are now over 14,500 communicants with 48 ordained and 80 unordained pastors. The Sagu-Karen Mission has been very successful and its educational activities are noted in Chapter XII.

The Pwo-Karen Mission was founded in 1854 by Mr. Von Meter of the American Baptist Mission Union. Up to 1863 they were associated with the Sgau-Karens but in that year they formed a Pwo-Karens Association of churches and they now have about 3,000 communicants in 2 churches with 29 pastors and 25 evangelists.

The Roman Catholic Mission was also begun in the early days of the British occupation. There are now 17 Roman Catholic chapels and schools with about 1,300 adherents. Roman Catholic Mission.

The Chins at the 1911 census were returned as 539. They are confined to the north-west of the district and orginally belonged to the southern Chins of whom Mr. Hougton says:—" The southern or tame Chins as they are sometimes called to distinguish them from the western or Chins.

wild Chins inhabit both sides of the Arakan Yomas. The tame Chins are merely a tribe which formerly inhabited the present Lushai, or wild Chin country, and which has been forced south by a "vis a tergo" at probably no very distant epoch." Most of them are now bilingual and are not ordinarily to be distinguished from the jungle Burman. They retain to some extent the hard working characteristics of their northern kinsfolk.

Shans. The Shans who numbered 344 in 1911 are scattered bodies who made their way into the northern part of the district from various parts of Burma. They are very quickly assimilated and the racial differences and customs which are slight very quickly disappear.

Arakanese. The Arakanese in 1911 numbered 4,396 but of these only 832 spoke Arakanese. They are all immigrants or descendants of immigrants who came mainly from Sandoway or Kyaukpyu and settled in the low hills east of the Arakan Yoma or along the western border on the sea coast. Though most of them now speak and dress like Burmese they are reputed to be morose and unsociable and are greatly feared by the Burmans who credit them with a deep knowledge and practice of witchcraft and the black arts in general. They appear to be on the whole much more backward than their neighbours. Nominally Buddhists they in reality pay little attention to Buddhism and among them 'kyaungs' and pagodas are few: 'nat' worship still retains a great hold over them as would naturally be expected of a people who keep to the wilder and more remote parts of the district. They are, too, much poorer than the people in the plains, their standard of living is low, and their villages consist often of small and wretched hovels.

Chinese. The Chinaman in Bassein as throughout the delta has virtual control of the liquor traffic and a Chinese general shop is a feature of every large village. The Chinaman too does all the better class work of the carpenter and draws high wages. In the towns he is addicted to gambling and bears a bad reputation for providing the Burman with the opium he cannot openly buy, and the cocaine which is prohibited, yet he undoubtedly suffers in reputation for the sins of the minority. Not litigious, quarrelsome, or close-fisted like the native of India, the Chinaman is not extravagant like the Burman, and for good workmanship, honesty, thrift, and care of his children is a model to his neighbours.

It is true in Bassein as elsewhere that the Chinaman is in high repute with the women of the races in the Province

as a husband and "there is a general opinion that the Chinese admixture improves the indigenous racial stock."

Hindu castes and Musulman tribes in 1911 numbered 11,882, and 8,114 respectively, but of these the great majority 8,666 Hindus and 5,212 Musulmen lived in Bassein. Indians would appear to have increased very little in number since the census of 1901 (18,935) but the figures of that year were abnormally swollen by the number of coolies employed on the construction of the Bassein-Henzada Railway. Most of the Hindus are coolies who are temporary residents only; out of the 8,666, males were 7,633 and females only 1,033. The Hindu coolies find plenty of work, reaping crops in December and part of January, coolie work at the mills from January to May, and miscellaneous occupations for the rest of the year. The Hindu coolie is as a rule hard working and peaceful, but those who have settled in the country, both Hindus and Musulmen, have a reputation for litigiousness which is not belied by the figures Both Hindus and Musulmen keep large herds of cattle and sell milk, but except for the isolated and old established village of Ashechaung in the Mobya Circle they rarely work land as owners or tenants. Large numbers of Musulmen, mainly Chittagonians, are sailors or boatmen. Musulmen too form a large proportion of piece-good traders and petty shop-keepers. Among the Musulmen population of 8,114 are numbered 2,925 Zerbadis, the off-spring generally of Musulman fathers and Burmese mothers. In marked contrast with the admixture of Chinese and Burmese, the offspring of this admixture is by no means an improvement on either stock and the low class Zerbadis are among the more dangerous elements of the population. Dislike of work, passionate temper, and unsteadiness are features common to a majority of the type and the young men tend to form the main element of hooliganism in the towns.

Indians

CHAPTER IV.

AGRICULTURE.

Before the annexation—Progress—Embankments—Soils—Crops—Deterioration of soil—Experimental crops—Paddy—Mode of cultivation—Nurseries—Drought and flooding—'Gwamayin'; 'Tadaungbo'; 'Mayin'—Agricultural implements—Varieties of paddy — Adulteration — Gardens— Plantains — Pineapples;

Cocoanuts; 'Dhani'; Sugarcane; Miscellaneous—Tobacco—Miscellaneous cultivation; 'Palawpinan'—Crop pests; Rice—Tobacco—Cocoanut trees — Betel-vine — Extension of cultivation—Agricultural customs—Land tenure—Holdings—Tenants—Labourers—Indebtedness and money-lending—Sales and mortgages—Agricultural advances—Co-operative Credit Societies—Agricultural stock—Grazing Grounds—Pigs—Ponies—Agricultural shows.

efore e nexa- on.

Before the annexation the agricultural area of the district was small and scattered. The agricultural population was very poor and when paddy sold for Rs. 8 per hundred baskets as in 1848-49 there was little incentive to a cultivator to produce more than was necessary. Cultivators were allowed to take up lands anywhere and at any time for cultivation, the revenue being assessed not on area but according to the yokes of cattle employed. The price of paddy rose to Rs. 12 per 100 baskets in 1850, Rs. 15 in 1851, Rs. 18 in 1852.

ogress.

With the establishment of British rule paddy rose in 1853 to Rs. 35 and, when prices continued to rise and the cultivating class began to realize the liberty allowed under British rule in dealing with their crops and savings, they began to extend cultivation, and all over the district the area under the plough continued to increase. In 1856 the cultivated area in Bassein district, which had then an area of over 8,700 square miles, was 134,520 acres. In 1876-77 though the area of the district had been reduced to 7,047 square miles the cultivated area had increased to 275,840 acres: in 1894 when the area had been reduced to 4,127 square miles the cultivated area had risen to 403,186 acres and this has risen to 699,916 acres in 1913-14 distributed by townships as follows:—

Kyônpyaw.	Ngathaing-gyaung.	Kyaung-gôn.	Bassein.	Thabaung.	Ngaputaw.
122,194	109,700	109,659	180,742	79,830	97,791

Progress has thus been rapid and continuous and in the more fertile areas free from liability to inundation, little cultivable waste remains. There are still, however, large areas of flooded land on the west of the Ngawun which may

in time become cultivable as flooding becomes less severe. Allusion has been made elsewhere to the general belief that the level of the land is rising.

Embankments.

The rapid extension of cultivation in the centre of the district especially in the Ngathainggyaung township was made possible by the Ngawun embankment. The land to the east of the Ngawun river is a low lying level plain and until protected by the embankment much of it was uncultivable owing to prolonged annual flooding.

The cultivated area protected by the bund in the Bassein district is estimated at 49,000 acres. But the embankment has injuriously affected the south portion of the Thabaung township, and Mr. Bridges in 1884 estimated that 32,000 acres of very fertile land had been either abandoned or rendered precarious by flooding. The total length of the embankment, which was built and is maintained by the Public Works Department, is 75½ miles from Henzada to its present terminus 3½ miles north of the Tabuchaung; of this 34 miles fall in the Bassein district. Originally begun in 1861 by Colonel Short the bund was under construction till the year 1884 when the last section almost up to the mouth of the Tabuchaung was completed: an eventual extension to the mouth of the Dagachaung was contemplated, and, on the advice of the Embankment Engineer, Mr. Gordon, orders had actually issued for the continuation of the bund to the mouth of the Shwenyaungbinchaung accompanied by the closing and diversion of the Tabuchaung during the year 1885. In that year, however, the embankment was for the second time severely breached, the preparations for the extension were abandoned, and the last 3½ miles north of the Tabuchaung remain abandoned up to the present day. Since 1885 expert opinion on the advisability of extension seems to have varied considerably and it was thought that prolongation to the Daga would merely result in throwing the water on the Kyaukchaunggyi Circle and might even endanger Bassein town.

During 1913 Mr. Barnett, the Executive Engineer, then in charge of the division, put forward a modest proposal to repair the 3½ miles abandoned in 1885 and to bring the embankment down to the mouth of the Tabuchaung. It was objected that this extension was unlikely to lead to any large extension of cultivation. On the other hand it is calculated that the extension as originally proposed to the Dagachaung would bring under tillage on the left bank nearly 34,000 acres of fertile waste land now unculturable

through flooding, while it would render unculturable or make returns precarious in about 7,000 acres on the right bank.

The cost of construction was, as far as can be ascertained, Rs. 15,530 per mile, and it is estimated that the extension of the bund from its present terminus to the mouth of the Daga would cost over three lakhs of rupees. Breaches of the embankment occurred in 1877, 1880, 1885 and 1888, and anxiety was felt in 1891. Quite recently also the behaviour of the river near the town of Ngathainggyaung has been disquieting and expensive revetments are in course of construction. Maintenance charges, however, average only Rs. 302 per mile and these are defrayed by the Provincial Funds as the Public Works Department derives no direct revenue from the embankment.

In the Kyônpyaw township a large area estimated at 54,673 acres is protected by the embankment along the main Irrawaddy river in the Henzada and Ma-ubin districts.

oils. To the east of the Yomas the prevailing soils are either clays or clay loams of varying colours and degrees of stiffness. Intrinsically the most fertile is a brown clay loam found in the Môbya circle of the Kyaunggon township, and the Bokchaung circle of the Ngathainggyaung township. This soil is easy to work retains moisture well, and shows no sign of exhaustion The soil in the large flooded area of the Thabaung township has also great natural fertility. This is somewhat lighter in appearance and contains a large proportion of sand or silt but since the construction of the Ngawun embankment cultivators cannot work it till too late in the season.

The soil of a sandy ridge running through the centre of the Kyônpyaw township in the north of the district is too porous to be generally suitable for paddy cultivation but it makes good garden soil.

A contrast to this is a very stiff dark clay found occasionally in very low lying land liable to inundation. When new this soil gives excellent crops, but it is difficult to work and does not long retain its fertility. The worst soil, however, is a shallow white clay overlying grit or laterite and characteristic of the plain round Bassein town.

A peculiar soil known as "putkyimye" is found on the eastern boundary of the Bassein township. It is a very dark friable clay and was up till the last ten years unworkable owing to inundation. Though it is now yielding heavy crops cultivators suspect its lasting power and think it has already begun to deteriorate.

To the west of the Yomas the soil chiefly found is a light sandy loam owing much of its fertility to jungle drainage. In the Ngaputaw township except for some high ground in Thingun the land is practically of one kind, namely, flat, marshy and thin soil, intersected by tidal creeks and liable to much damage by salt water.

Crops.

Rice.—Rice is by far the most important crop in the district and out of the 699,916 acres cultivated in 1913-14, 652,838 acres were under rice or roughly thirteen-fourteenths of the whole cultivated area. The rice cultivation is divided into three main kinds :—

(1) the ordinary wet weather and permanent cultivation of the great paddy plains and cultivation of lands flooded in the rains in which the land is ploughed and cropped late;

(2) cultivation of submerged lands which dry up in the hot weather and give a hot weather crop *mayin*;

(3) "taungya" cutting on the hills.

It is the ordinary wet weather cultivation which prevails throughout the district, no less than 650,463 acres being cultivated in this way. It is this rice alone that finds favour with millers and forms the export staple from Bassein. There are no records to show the areas under cultivation before the British occupation, but, though they may have been small it is certain that rice must have formed the staple food of Talaings and Burmans from time in memorial, so that considerable tracts of the district must have been cultivated temporarily or permanently for long periods.

Deterioration of soil.

There is nothing to indicate what the fertility of the soil was in the past, but Mr. Bridges the Settlement Officer in 1880-81 wrote: "The tract of shifting cultivation extends round the town of Bassein to the eastern part of the Kungyaung and then south through Athegyi into Kanywa and Tanlebin and across the Ngawun into the Leingon and Takaing circles. The soil in this tract is generally so poor that the cultivators are unable to obtain fair yields off it for more than two or three years in succession. According to the statements of the cultivators land of this kind which has been worked two or three years in succession requires two or three years fallow." He found a great deal of this shifting cultivation near Bassein and to the south-west; in other parts, however, he found that land had been cultivated continually for 15 to 60 years and that deterioration was said to be slight.

Writing of the Ngaputaw township in 1902 Mr. Mackenna, the Settlement Officer said: "In the better soils I

think it, however, unlikely that there has been any real deterioration: my experience in Revision Settlement has shown that in normal soils with an adequate rainfall there is a well maintained fertility and that good paddy land does not become exhausted to any appreciable extent by continuous cultivation. In thinner and poorer soils, however, there is a process of exhaustion. The soils become tired and hungry, and in default of artificial fertilization must be allowed a rest."

In 1914 Mr. Jamieson after revising the settlement of the centre and north of the district, wrote:—

"Crop measurements do not suggest that there has been any serious deterioration in the fertility of rice land during the expiring settlement. The statement of old men that on land surrounding Kyaunggon town on both banks of the Daga formerly the paddy was so high that it was impossible to see a man on a buffalo riding through, is doubtless a picturesque exaggeration, but it is only reasonable to expect some deterioration in this land, which, apart from the Bassein town plain, is probably the oldest in the district. The sterile and hungry character of the soil of the Bassein town plain itself has been emphasised at previous settlements. All that can be said of it now is that thanks to systematic fallowing of the worst portions it is no worse than before. Elsewhere in the settlement area there has been little change. Large areas have been brought under cultivation and continuous cropping has not produced any great effect as yet. Any slight deterioration that may have taken place on older land, has perhaps been nullified by more careful cultivation." It would appear then on the whole that continuous cropping is likely to lead to deterioration of the soil: the cultivator has no longer large areas of waste land to which he can move when his own land is exhausted. His land is still over vast areas enriched by the soil carried in the waters of the innumerable creeks, and, on his part, ploughing and harrowing are said to be more thorough than they were; stubble is no longer burnt to save trouble but is ploughed into the ground, and the practice of manuring is becoming much more general.

xperimental ops.

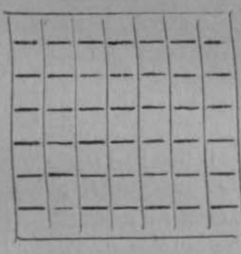
The use of artificial manures is as yet unknown, though experiments were tried with basic slag in 1898: no records of this experiment are available. Nor has the attempt to introduce other crops been successful though experiments were made with winter wheat in the north of the district in 1882 and yields of 623 to 1,614 pounds to the acre were obtained.

Paddy: Mode of cultivation.

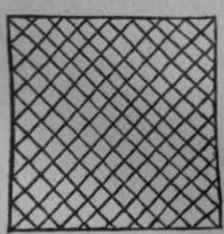
In the south of the district cultivation is generally uniform and simple, the harrow (*tundon*) alone being in general use, the plough (*te*) and roller (*settundon*) being rarely met with. In the centre and north of the district the ordinary method of cultivation is first to plough the field, then to harrow it thoroughly, and finally to pass the roller over it once or twice before transplanting the seedlings from the nursery. Where, however, the soil is old and light, the harrow alone may be used, and in the case of inundated land, covered with thick reeds and grass, harrowing is occasionally dispensed with altogether and cultivators merely clear the growth with their "dahs" and transplant at once.

Ordinarily harrowing is done most systematically according to a definite plan. Mr. Bridges in his Settlement Report of 1880 thus describes it, and this description still holds good for a large part of the district, though custom is no longer as rigorously observed as of old.

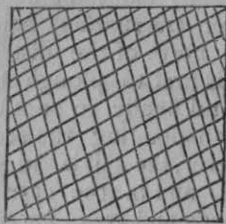
"As soon as the water has settled on the ground the first ceremony is to consult the village 'soothsayer' and ascertain the most auspicious day. The harrow is then drawn across the field in a straight line from east to west or north to south according to the directions of the 'soothsayer.' The first lines are cut across the opposite direction until the field is divided into a mass of small squares as shown in the diagram: this is called 'le-kwet-kya'."



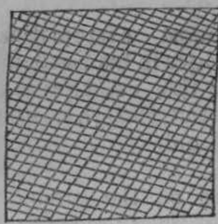
The harrow then cuts the field crossways: this is called 'daung-dan' ploughing.



Then the harrow is drawn across the field in a more slanting direction called 'ya-saung.'



Harrowing in one direction is called a *sat*. In low-lying fertile lands six *sats* are considered sufficient, but, if the cultivator has no buffaloes to knead the soil, and if six *sats* are not sufficient, the harrow may be again drawn across the soil in a direction opposite to the last called 'nan-saung'.



In the case of high land ten or twelve *sats* may be required.

In 1880 Mr. Bridges wrote:—"After the field has thus been ploughed, the seed is sown broad cast after having been steeped two days in water and allowed to germinate. When the soil is not rich or lies very low and the water over it rises too rapidly the seed is first sown in nurseries and afterwards transplanted when the plant is a little more than a cubit in height. Transplanted paddy yields a much larger crop than paddy sown broad cast, but it is a more expensive and tedious operation."

To-day transplanting as opposed to broadcasting is practically universal in the centre and north of the district but in the south broadcasting still prevails: it is said that near Pyinkayaing transplanting is impossible as the sandy soil produces a very severe itch affecting the hands and forearms.

Nurseries It is vital for the cultivator, who depends on transplanting, to have vigorous plants as early as possible and great care is exercised in the selection and preparation of the paddy nurseries. Each cultivator must ordinarily depend on his own nurseries and cannot purchase seedlings except at great expense. The nurseries are sown from the middle of June to the middle of July and as a rule seedlings are

transplanted one month after being sown in the nursery, though where they have to withstand floods they are generally six weeks old. In good low lying land the seedlings are planted one or two at a time at intervals of nine inches, while on high land they are planted four or five at a time at intervals of six inches. The transplanting is done entirely by hand, no stick or other implement being used.

Drough and flooding

In the north and centre of the district excessive rain at the beginning of the monsoon may delay the sowing of the nurseries and after sowing or transplanting heavy floods may drown the young plants in the nurseries or the fields: in some parts indeed considerable areas may have to be transplanted twice. In the south salt water inundations may injure the growing crop and on the higher lands failure of the late rains may result in the crop giving little or no grain. But it is in the Thabaung township that cultivation is most precarious. Here large areas are inundated every year: high land suitable for nurseries is scarce and the seedlings must be planted in time to take root before the water disappears. If ploughing does not start before the end of October operations are necessarily hurried and superficial, as after the end of October no great amount of rain can be expected. If his seedlings fail from any cause the cultivator can replace them only at considerable expense.

'Gwa-mayin.'

Transplanting of this area takes place in October or even November and the crop, which is reaped at the beginning of February, is known as *gwa-mayin*, the crop which comes between the main unirrigated rice crop reaped in December and the irrigated rice crop proper, *mayin*, reaped in March or April. It is also allied to *mayin* in that land exceptionally favourably situated near a stream or pool of standing water is sometimes irrigated by means of scoops worked by hand or by an elaborate system of cogwheels worked by buffaloes or bullocks.

'Ta-dungbo

Allied to the main crop cultivation too is the cultivation of the variety of paddy known as *tadaungbo*. It has made to its appearance within the last seven years and now covers about 5,000 acres in the north, mainly in Kyonkayin circle, into which it was introduced from the neighbouring Ma-ubin district. Sown broadcast in April and reaped in November it is only grown on very badly flooded land unsuitable for *kauklat*. It is a straggling plant and as it attains to a height of six feet it is able to resist all but the worst kind of flooding. It is not, however, a popular crop as it is difficult to reap, harbours snakes, and exhausts the

soil rapidly and finally it is difficult to mill properly and does not command a good market.

Mayin." Irrigated rice or *mayin* is planted in the cold weather and is reaped in April or the beginning of May. The chief centre of this cultivation in Bassein is the shallow expanse of water known as the Lahagyi lake in the Thabaung township and it is also practised in low lying lands where the water remains after the general flood has subsided. Nurseries are planted on the highest available ground as soon as the waters begin to subside and the seedlings are gradually transplanted as the depth of water decreases. In some places streams are bunded to retain water and in others the land is irrigated, either by water wheels or by long wooden scoops worked by hand. A water wheel costs Rs. 30, is worked by a pair of bullocks and can irrigate four to five acres. The area under *mayin* has risen from 775 acres in 1901 to 2,375 acres in 1914 and there are still large areas suitable especially in Bodaw-Kanni circle where Karen cultivators and Burman potters from Sadaw wish to supplement their ordinary work by *mayin* cultivation.

gricul-ıral im-ements. Agricultural methods are very similar throughout the Delta and the implements used are the ordinary wooden plough with an iron tip (*te*), the five-toothed harrow (*tun*), and the roller (*hleindon* or *chandon*). Near Bassein a few American "disc cultivators" are found but they prove too heavy and exhausting for cattle on low ground. Attempts to introduce other implements, such as the Sibpur plough in 1902, have failed.

'arieties f paddy. Unirrigated winter rice is grown on ninety per cent. of the occupied area and the bulk of this comes to Bassein for export. It falls into the two main divisions of *kaukkyi* and *kauklat*: though ordinarily transplanted at the same time, *kaukkyi* is not reaped till a fortnight or three weeks later than *kauklat*. The chief varieties of *kaukkyi* are a black grain known as *nga-kwe*, *dalizan*, *midon* and *byat*. It yields the best rice but comes to perfection only on the best lands. It is thus grown mainly for home consumption and forms a small proportion not more than five per cent. of the total paddy crop of the district. Export paddy is almost entirely *kauklat* of which there are very many varieties. *Lam-bat*, *let-ywe-zin*, *yodaya*, *ngayebo*, *sabani* and *kawkanyut* are grown mainly but not exclusively on high ground while *ngaseingyi*, *myit-nga-sein*, *nga-kyauk* and *mok-seik-kyi* are characteristic of low ground. All these varieties are grown throughout the district though in the south *nga-kyauk* is most

commonly met with. Elsewhere no particular variety is exclusively found though on flooded land *mok-seik-kyi* which has the advantage of maturing quickly is largely grown, in spite of the fact that it is light and tends to break in milling. The *gwa-mayin* crop in the flooded part of the Thabaung township is mainly *mok-seik-kyi*. *Tadaungbo* in Bassein as elsewhere in Burma has never become popular as it is not wanted by the miller and is not liked by the Burman. *Nga-kyauk*, *myit-nga-sein* and *let-ywe-zin* are heavy, *sa-ba-ni*, *yo-da-ya* and *mok-seik-kyi* are light grains.

Throughout the district many of the holdings have a field of *kauk-hnyin* this is a glutinous variety of rice grown exclusively for domestic use. "In the ploughing and reaping seasons the cultivators eat early in the morning a kind of gluey rice called *kauk-hnyin*; it is generally boiled, then steamed in a bamboo, and is highly satisfying."

Of *mayin* paddy two varieties are grown, *baw-gyan* on the higher ground, *lon-thwe* on the lower: it is grown for home consumption and is rarely sold.

The many varieties of *kauk-lat* are sold in bulk to the millers and no trouble is taken to keep the varieties separate. The cultivator himself selects his seed to a certain extent, that is to say, he will reserve the appropriate seed for high and for low ground and does not mix the two species in the same plot. On the other hand the roundness and evenness of the grain do not interest him: he is concerned with bulk only, and if he takes the trouble to produce heavy fine grain the profit goes to the broker.

Adulteration.

So far back as 1889 the rice millers at Rangoon had addressed the Chief Commissioner with a view to having the adulteration of paddy stopped. Wetting of paddy to increase its weight was said to be common but when enquiries were made in Bassein it was found that the watering of paddy was unknown in the district. Light and dead grain was said to be mixed with paddy by dishonest boatmen. It was found impracticable to register boatmen and with the enormous increase in the crops and the handling of paddy in bulk, the regulation of adulteration became impossible.

Gardens.

Although most compounds have a few fruit-trees, conditions throughout the district are not generally suitable for garden cultivation and the fruit trade is of no great importance except in Kyonpyaw township where a considerable area of land is used for growing plantains which are exported in considerable quantities. There are also

pineapple, cocoanut, *dhani* and betel-leaf gardens on a comparatively small scale, the produce of which is all used locally, and tobacco, sugar-cane, and vegetable cultivation has some importance in Ngathainggyaung township.

Plantains. Though plantains are grown all over the district systematic and extensive cultivation is carried on only in the Kyonpyaw township throughout a sandy ridge of highl and which runs through the centre. Of a total of 17,141 acres for the whole district under plantains in 1914, no less than 11,024 acres were in th s area. Three varieties are commonly grown namely *pigyan*, *nanthabu*, and *yakaing*. After selection of a plot the surface is cleared and a miscellaneous crop such as Indian corn, cucumbers, or vegetable marrow is sown: this is harvested in August and a sessamum crop is put down in September or October to be harvested about January. The soil is then cleared and dug up and planted with the *pigyan* or *nanthabu* varieties of plantain. After six to eight years the yield begins to fall off and the *ya-kaing* plantain is substituted: this in turn begins to deteriorate in ten or twelve years' time and the holding is then diverted to growing *thetngè* or thatch, which springs up spontaneously. For five years fair yields of *thetngè* are obtained but bushes and scrub jungle begin to choke the *thetngè* and the holding is then allowed to lie fallow for three or four years when it is again cleared and planted generally with the *ya-kaing* variety. Of the three varieties *pigyan* is the best: it requires good soil and careful weeding and the fruit commands by far the highest price of all the varieties.

The *nan-tha-bu* is a smaller plant than the *pi-gyan* and like it requires good soil and careful weeding. In value it occupies a position midway between *pi-gyan* and the *yakaing* which is hardier and requires much less attention than the other varieties and commands a much smaller price. The *ya-kaing* variety constitutes about seven-tenths of the whole plantain growth. The Daga flows through this plantain growing area and large quantities which may be roughly estimated at not less than two millon combs worth about Rs. 30,000 are exported every year by boat to Rangoon, Myaungmya, Pyapon and the delta generally. The manufacture of dried plantains is carried on to a limited extent. Good quality plantains after being allowed to become thoroughly ripe are skinned, put in a basket, and well shaken so that any free liquor may drain away. They are then placed on mats and exposed to the sun for five days, each fruit being turned every day

The fruit becomes dark, almost black, in colour, will keep for a considerable time, and sells readily at five viss to the rupee.

The best pine-apple gardens are in the Shwemyindin and Kyaukchaunggyi circles of the Bassein township. There are also a number in the Shangwin and Ngakwa circles of the Thabaung township. The best gardens are on high land on a clay soil. The cultivation is careless as no attempt is made to weed out inferior plants or to give the soil a rest. The gardens are as a rule shaded by jack fruit, *danyin* or *kanazo* trees, and the fruit being of a fair size and moderately sweet finds a ready market in Bassein. The gardens in the Shangwin and Ngakwa circles are old gardens, and are generally found occupying high sandy ridges or hillocks intervening between cultivation. The soil is poor, the gardens have deteriorated in consequence of prolonged neglect, and the fruit which is small and stringy commands a very poor price. **Pine-apples.**

Cocoanut gardens have increased from 712 acres in 1901 to 835 acres in 1913, but the area is insignificant compared with the large amount of waste available. The best gardens are found on the west coast. The gardens are very profitable and the nuts are sent in considerable quantities to Bassein, where there is a good market. The cultivator, however, is very haphazard in his methods and takes little advantage of the opportunities present at his hand to develop cocoanut plantations. **Cocoanuts.**

Dhani gardens are an important feature of the Ngaputaw township which has about 1,700 out of the 2,590 acres under *dhani* in the district. The gardens are found in scattered patches along the marshy banks of the numerous tidal creeks in the lower part of the district, as *dhani* thrives best in somewhat brackish water or where the salt tidal wave and the fresh water of the creeks unite. Systematic planting only takes place at the planting of a new garden when the *dhani* is raised from seed or seedlings. It is generally cut in *Tabaung* and almost its sole use is for thatching. Sugar and toddy may, however, be made from the juice of the tree, and *dhani* may be mixed with tobacco for smoking. **"Dhani."**

The land in the district is generally unsuitable for sugar-cane and in 1913 only 200 acres were under this crop compared with 323 acres in 1901. What gardens there are are usually found on the low banks of creeks, and the variety of sugar-cane planted is the *kyauk-kaung*. This is not manufactured into jaggery but is eaten in the stalk as a sweetmeat. **Sugar-cane.**

Miscellaneous.

Along the banks of rivers and near the towns small betel vine gardens are common and here and there betel-nut palms are found. The produce is all used locally like that of the numerous house gardens, of which the owner generally distributes what he is unable to consume himself among his friends.

Tobacco.

Next to plantains in importance comes tobacco. It is grown mainly on the right bank of the Ngawun opposite Ngathainggyaung. The area on the left bank is somewhat limited. This cultivation is only some sixteen years old the first impetus having been given by the distribution of seed by Government: the area had risen to 2,119 acres in 1901 and to 5,148 acres in 1913. The seed is sown in October and the young seedlings are transplanted in December The ground needs weeding and the plants have to be pruned and carefully protected from insect pests until the plucking of the leaves in April. The drying and curing operations are simple and the tobacco, which is a light coloured Bengal variety, is used for chewing with betel and for smoking generally. It is inferior in colour and flavour to the Danubyu tobacco and fetches a lower price. The bulk of the crop is sold locally between April and June at an average of about Rs. 30 per 100 viss but some small capitalists store it and retail it for Rs. 60 to Rs. 75 from August to February. A few cultivators also collect the tobacco stalks which are chopped up and used as a filling for Burmese cheroots: if sold this fetches about Rs. 75 per 100 baskets.

Miscellaneous cultivation.

Miscellaneous cultivation of country vegetables is almost entirely confined to the flooded area on the right bank of the Ngawun in the Ngathainggyaung township. There maize, water-melons, grain, beans, brinjals, sweet potatoes, pumpkins, and a few acres of groundnuts are found on land getting a fair supply of silt but not sufficiently fertile or lying too far inland to be suitable for tobacco. The gardeners are usually boatmen or timber workers who do not depend wholly on their small plots for a living. Though cultivation is profitable and the produce finds a ready sale, it supplies but a very small proportion of the needs of the district as the area available is very limited.

An interesting miscellaneous crop is that known as *palawpinan*, a tuber resembling a yam in taste and manner of growth. It was cultivated first in the Ngaputaw township from whence it has spread to the Thabaung township and now covers about 200 acres in Thabaung. It is a *taungya* crop and is ordinarily not grown more than two years in succession in the same clearing. For cultivation

the surface of the ground is cleared, and in May pieces of the stem of plants kept for the purpose are planted in holes. The plants attain a height of six feet and are matured by the middle of November. Each plant has four or five tubers which are dug up as required, the average price being Rs. 8 per 100 viss.

Crop pests. Paddy cultivation in the settlement area suffers from various insect pests the chief varieties being the—

Rice. "u shauk po," "gok po," "ywet pyat po," "daung de."

The first two kill the plant while the other two weaken it by eating the young leaves. None of these insects are peculiar to the district or any part of it, and although they cause cultivators a certain amount of loss every year the damage is not on the whole very considerable. No preventives are in use, except that cultivators occasionally open the *kazins* of fields infested with the *ywet-pyat-po* and let the water out: this remedy is said to be almost as bad as the disease as, though the insect disappears the outturn of the whole plot is reduced.

Rats also do a certain amount of damage every year, especially in the Thabaung township and the western portion of the Bassein township: they live in holes in the dry weather and take to the trees in the rains. Along the Yomas and on the west coast crops are always liable to considerable damage from elephants, deer, and pig. The low-lying areas in the south of the Ngaputaw township and to a much less extent a number of *kwins* lying along the Panmawaddi river in the Bassein township suffer from salt water inundation, but the damage done is mainly in the south. There the presence of salt water causes the stalk to grow to an abnormal size while the ears are either light or empty, being also tinged with a purplish colour. Areas lying near salt water are also liable to damage from small crabs which nibble the young paddy plants just as they are sprouting.

Tobacco. Tobacco cultivation suffers from a variety of pests which sometimes reduce the outturn of a holding by more than half. The principal are the—

"po-than-gaung"
"po-daung-de"
"pyan-po" } caterpillars.
"gok-kya"
"nyun-bu-po"
"pa-yit" ... a cricket.

Of these the *gok-kya* is the most feared as it does most damage by night and cultivators frequently have to spend a great part of the night plucking these insects off the leaves by lamplight.

Cocoanut tree. Cocoanut trees are liable to two varieties of insect pest, namely, the rhinoceros beetle which eats the young shoots and may in some cases kill the tree, and secondly a small flying insect which feeds on the leaves causing them to turn brown and both leaves and fruit to fall off prematurely.

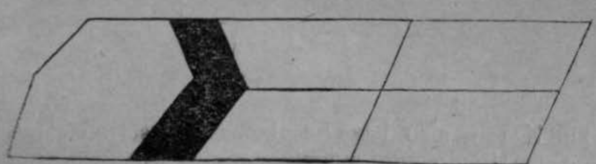
Betel vine. Betel vines are liable to various diseases for which no remedies are known. The most dreaded is *si-sum* which spreads from pole to pole and is said to be caused by excessive dew in November and December. The leaves turn black and drop off and the whole plantation has to be abandoned. Other diseases are known as *sit-hme* and *thalıga-myetsi*. The former attacks the joints which turn black and are eventually cut through. In the latter the leaves become yellow and patchy but only occasional poles are affected.

Extension of cultivation. Out of a total acreage of 2,641,036 the cultivated area in 1913-14 was 699,916 acres. Grazing ground areas amounted to 121,184 acres and Forest Reserves to 408,320. There would thus appear to be vast areas still available for cultivation: such, however, is not the case. Along the Yomas and the western coast the land is almost entirely unfit for cultivation of any kind, and probably there are now not more than 300,000 acres of waste which could possibly be cultivated; much of the waste land available will give only inferior or precarious crops. Thus of the Ngaputaw and southern part of Bassein township Mr. Duffin, Settlement Officer, wrote in 1913. "There are still 153,471 acres of culturable waste, but as most of this is low-lying and subject to flooding by salt water, the initial expenses of reclaiming these areas, and subsequent maintenance charges, are in most cases prohibitive." Of the rest of the district Mr. Jamieson, Settlement Officer in 1914, wrote: "Thabaung and Ngathainggyaung west of the Ngawun are the only townships in which large areas of culturable waste remain. Much of this waste was formerly culturable, but was abandoned owing to the heavy flooding consequent on the construction of the Ngawun embankment and is now a flat level plain covered with elephant grass and reeds. Though the soil is fertile flooding is still sufficiently severe to render cultivation a highly speculative proceeding. The available area elsewhere is both limited in quantity and poor in quality and consists

of very high land which it would barely pay to cultivate or of scattered odd pieces inconveniently situated for working. On the west coast near Ngayokkaung village there are several thousands of acres of black mud at present covered with mangrove jungle and partially submerged by the sea at high tide. If sufficient capital were available to clear and bund this land it would become probably the most fertile in the district. It is however unlikely that any great expansion of cultivation will take place as this portion of the district is remote, unhealthy, and sparsely populated. Ample space is also available in the same area for the successful exploitation of cocoanut and betel-nut but for the same reasons no great development of these latent resources is to be expected."

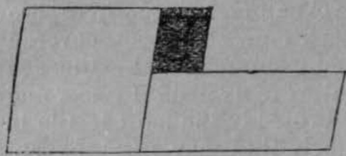
Agricultural customs.

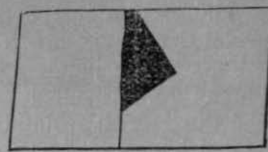
The following curious customs and beliefs may be mentioned: the account of them is taken from Mr. Bridges' Settlement Report of 1881 and though the customs have weakened and become almost obsolete near the towns and among the more sophisticated cultivators they are still strictly observed in the more remote parts. Both Burmans and Karens but especially Talaing-Karens attach great importance to the shape of their holdings. They object to their land touching that of a cultivator living in a different village even if he is one of their own race. In many *kwins* the Talaing-Karen holdings are found as shown in the diagram attached, the shaded part being the path left open to prevent the holdings touching each other.



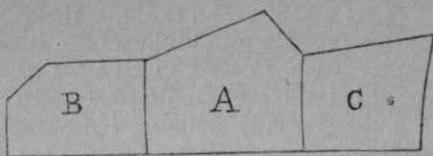
They also object to the field of a neighbour forming an angle to their land. The piece of land which projects is left fallow if a small field, or if a large field a plough's breadth of land is left fallow between the holdings and this is considered sufficient to dispel the evil. The angle formed by one field to another is called *acheik*, and the part

shaded in the diagram shows the land which would be left fallow.

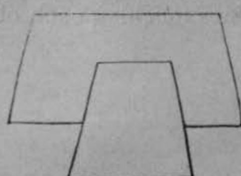




A Burman or Karen also objects to his holding being situated between those of near relatives, such as father and son or daughter, brother and sister, uncle and nephew or niece. A holding lying thus is called *ahnyat*, thus in the diagram attached if holding A is held by a stranger and holdings B and C are cultivated by two near relatives, holdings B and C are said to *hnyat* holding A.



The objection also applies in the case of a holding being partly surrounded by another holding: this is called *le-bat*.



The Karens also have an elaborate system of *ashaung* or fines for the doing of unlucky acts. These fines are quite trifling and usually consist of four annas or an egg or a fowl. Letting an axe fall from another man's house, or driving a cart against a house, or heap of paddy, or across another man's land, are all considered to be unlucky.

The cultivators always consult the village soothsayer as to the auspicious days (*yet-ya-za*) for beginning ploughing and the unfavourable days (*pyat-tha-da*) are scrupulously avoided. On completion of threshing, *kauk-hnyin*, plantains, and cocoanuts are offered to the *Bon-ba-gyi* nat on temporary shrines erected at the corner of a field.

Before burning and clearing new land the cultivator must give all living creatures seven days' verbal notice to quit.

In 1861 the *kwin* system was introduced in the settlement effected by Colonel MacMahon and Captain Munro. This settlement was remarkable for the introduction of the lease system which had been previously tried in the Rangoon district in 1868. Under this system settlement operations besides determining rates per acre included also the granting of leases for a whole holding for a term of three, five, or ten years to those owners who were willing to accept the terms offered. To induce cultivators to take up these leases two concessions were made: firstly, the land was not to be measured for revenue during the period of settlement, and secondly, all adjacent waste brought under cultivation was to pay no revenue till the lease expired. It was hoped by this means to avoid the expense and annoyance of annual measurements and to stimulate extension of cultivation. The leases were, however, regarded with great suspicion and a large proportion of the cultivators preferred annual assessment. The system also proved open to serious abuses and leases were not renewed beyond 1879. After 1879 land was acquired mainly by *potta* grants, which have been discontinued for some time, and by acquisition of landholders' rights in respect of land cultivated. **Land tenure.**

Though large holdings are gradually increasing in number small holdings of under 20 acres are still in a large majority. In the Ngaputaw and southern Bassein townships Mr. Duffin found that the average of 15,805 holdings was 13·35 acres. There were 680 holdings of an area exceeding 50 acres, 76 exceeding 100, and only 2 exceeding 200 acres. In the centre and north of the district Mr. Jamieson found that the average of 30,955 holdings was nearly 16 acres, and of the holdings 22,993 were under 20 acres. In the Kyonpyaw and Ngathainggyaung townships Mr. MacKenna had in 1898-99 found 71 holdings of more than 100 acres: by 1913 the holdings of over 100 acres in this tract had increased to 131 and of these 2 were of over 500 acres. In the whole area settled by Mr. Jamieson 1,103 holdings of 50 to 100 acres and 222 holdings of over 100 acres were found. The percentage of the occupied area held by non-agriculturists is steadily rising. According to the latest Land Records figures it is 16·75 per cent., whereas four years ago it was only 15·53 per cent. In the south Mr. Duffin found a fair number of non-agricultural landlords near large villages who had acquired the land by inheritance, purchase, or foreclosure of debts due to them for **Holdings.**

advances. Of the centre and north of the district Mr. Jamieson writes: "Large land-owners are nearly all Burmans who do not work any of the land themselves but let it to tenants Nearly all are rich traders and middlemen who store the paddy received as rent in the hope of prices rising during the rains. High paddy prices have made land an exceptionally attractive investment."

Tenants. Owing to the conditions under which cultivation has been extended a large regular tenant class has gradually come into being and rents have become competitive instead of customary almost throughout the district. In 1898-99 Mr. MacKenna found that though rents had become a matter of bargaining in the north of the district the old customary rent of one-tenth of the reputed outturn plus the land revenue was still the rule in the greater area. In 1912-13 Mr. Duffin reported that the custom had disappeared in the south, and in 1912—14 Mr. Jamieson found that "this customary rent has disappeared completely. The growing scarcity of fertile waste has perhaps been the chief factor in strengthening the landlords' position." In the case of fixed produce tenancies, compared with which other kinds of tenancy are negligible in number, being not more than 5 per cent., the normal rent is one-third of the gross produce, the landlord paying the revenue. One of the great grievances of tenants is that, though they can afford to pay this in good years, in bad years landlords either grant no abatement of rent or the amount remitted is not in proportion to the deficiency in the crop The south of the district is more backward than the centre and north but even in the south the rented area had increased from 14 per cent. in 1897-98 to 29 per cent. in 1912-13 of the whole occupied area, while in the centre and north it had increased from 25 per cent in 1898-99 to 40 per cent. in 1912-14: in a narrow strip of *kwins* along the right bank of the lower Daga the percentage of rented to occupied area was 68 per cent. Coupled with the increase in rented area has been a remarkable increase in rents. In the southern area the rental value rose in the 15 years from Rs. 3·47 to Rs 5·22 per acre, while in the centre and north, where in all the more fertile parts competition is keen and landlords are in a position to select their tenants, rents have risen from Rs. 5·85 to Rs. 9·06 per acre. In one tract the rent is as high as Rs 15 for first class land.

Changes in tenants are almost continual, in the southern area 5·3 per cent., and in the central and northern area 9·62 per cent. only of tenants had worked the same land for five

years or more, while the majority in both areas worked the same land for one year only. The lease system is unknown and insecurity of tenure is the rule.

The standard of living among small owners is slightly higher than among tenants, Mr. Jamieson's figures being Rs. 251 per household for owners and Rs. 227 for tenants. It is distinctly higher in the Kyonpyaw than in the Bassein subdivision: there are also racial differences as Karens spend slightly less than Burmans.

Agricultural labourers. The agricultural labourer now forms a very distinct and important class, as hired labour is freely employed in all the wealthier and more fertile parts and landless men are everywhere common. The number of male and female farm servants and field labourers was at the 1911 Census 38,426 and 37,530. The men are nearly all Burmans or Karens residing permanently in the district: though many Upper Burmans formerly came down temporarily for the cultivating season they have ceased to do so for at least five years. Rates of pay are regulated rather by custom than competitive conditions and have not changed materially in the last fifteen years. Wages are still paid in kind except in certain areas where Indian labour is employed in reaping in which case contract rates paid in cash are in force. The daily wage of an adult male is a basket of paddy together with his food and the payment is made generally after the harvest. However the majority of labourers are hired for definite periods; those hired for the whole cultivating season (*talinpyi kyiwin*) get from 80 to 120 baskets according to their age and capacity: men hired for the ploughing season of three months only (*tun-don-byitt*) get 40 to 50 baskets: for ploughing, plucking, and transplanting (*le-pyi-sa-yin-hnga*), that is, for about four and a half months, the rate is 60 baskets. and for the two months of the reaping and threshing season 30 to 35 baskets.

Female labour is employed mainly in planting and reaping and the rate of hire is as a rule a basket a day. In the neighbourhood of Bassein and along the Ngawun enbankment Indian mill coolies are hired in small gangs during the slack season after the mills have closed down for reaping. A normal contract is Rs. 80 per 1000 baskets together with a basket of rice per man.

Mr. Jamieson in 1912—14 found the average annual expenditure of the agricultural labourer to be Rs. 144 per family against Rs. 243 for the other classes, and wrote "marked differences in dress and housing apparent to the most casual observer support these figures . . . there

can be no doubt that the average labourer has a struggle to make both ends meet. He seldom succeeds in acquiring sufficient capital to become an acceptable tenant, and his opportunities of bettering his condition are few. On the other hand he enjoys certain compensations, his work is not arduous except for limited short periods, he has abundant leisure, and it is only in very exceptional cases that his pay need cause him any anxiety."

Indebtedness and money lending. So far back as 1879 the Settlement Officer in dealing with the subject of indebtedness noted that the Burmans were not of a saving disposition and spent their money in amusements or fine clothes, while Karens on the other hand hoarded their money or invested it in cattle. It was found that in places where the soil was good many cultivators were in debt owing to loss of cattle by disease, others owing to gambling or extravagance, but few were hopelessly in debt: on the other hand, where the soil was poor, cultivators were in a chronic state of indebtedness, and were often forced by becoming hopelessly involved to migrate elsewhere. The usual rate of interest about 1880 was 60 per cent., between friends 45 per cent., and between relatives 30 per cent. Indebtedness was worst among the Talaing-Karens. It was stated that bonds were signed in the most reckless manner, payments were seldom entered, and bonds fully paid up were often left in the hands of the money-lenders. Things became so bad that early in 1883 with a view to protect ignorant Karens, who were in danger of falling into the hands of unscrupulous money-lenders, provision was made for transferring to the Collector the execution of decrees for the sale of immovable property belonging to any Karen in the Kangyidaung or Thigwin township. This provision was reported by Karen Myoôks to have had a good effect. It applied, however, to Karens and to a limited area only, and elsewhere besides heavy rates of interest the introduction of the Registration Act worked to the detriment of the ignorant cultivator. Mr. Bridges in 1882-83 wrote: "The effect of the act would appear to be to enable unscrupulous men to enforce fraudulent contracts against their more ignorant neighbours." Indebtedness had thus become at that time and has continued to be a normal feature of agriculture. The ranks of debtors were swelled by immigrants who came in and cleared new land with insufficient capital, and by owners and tenants who lost cattle, had bad seasons, or squandered their money in the gambling which has yet by no means been suppressed. In 1897-98 the Settlement Officer

found that of the families examined in Bassein and Ngaputaw townships 54 and 36 per cent. were indebted: by 1912-13, these figures had risen to 68 and 65. Similarly in 1898-99 it was found that of 5,573 cultivators examined 44 per cent. were in debt with an average of Rs. 136 while in 1912—14 in the same area 10,394 cultivators were examined of whom 36 per cent. were in debt with an average of Rs. 308 per person. Mr. Jamieson says: "The two salient points of difference are a greatly increased incidence of debt and a heavy drop in the rate of interest." In 1898-99 the majority of the loans had borne interest at more than 36 per cent., but in 1912—14 loans bearings interest at 36 per cent. and less were 95 per cent. of the whole.

Indebtedness is higher among the small owners than amongst tenants, and the rates of interest which still exceed 48 per cent. are found mainly in the foothills of the Yomas and the flooded precarious area of the Thabaung township where the standard of living is lowest.

In the south the money-lenders are mostly Burmans though a few Indians and Chinamen are found in some of the larger villages. Near Bassein borrowings are largely from Chetties. The Chetties in fact do most of the financing directly or indirectly. "In the Bassein subdivision they rarely lend directly, but in Ngathainggyaung they readily accept land as security for loans, though they generally confine themselves to large transactions of over Rs. 1,000. The small loan business is left to local traders and money-lenders who borrow much of their capital from Chetties at 21 to 24 per cent. per annum. This is in turn advanced to cultivators at 30 to 36 per cent. per annum." The Chetty never lends to tenants and demands punctual payment: the Burman charges higher interest but conducts a more risky business. The Burman money-lender has now become keen on the acquisition of land but the Chetty far from wishing to become a landlord gets rid of any land he may acquire as soon as possible at a fair price.

Sales and mortgages.

The sale and mortgage values of rice land have shown a steady and continuous appreciation, partly due to the rise in the price of paddy, partly to the scarcity of fertile waste, partly to the competition of non-agriculturists who have come to look on land as a suitable form of investment. In the Settlement operations from 1879—84 the highest selling price per acre recorded was Rs. 17 in the north of the district, but generally throughout the district land was worth little more than Rs. 5 to Rs. 10 per acre.

Even in 1897-98 in the Ngaputaw township the sale rate was only Rs. 6·63 per acre: this, however, had increased in 1912-13 to Rs. 13·94. Mortgage rates rose from Rs. 7·18 to Rs. 11·98. In the centre and north values have appreciated enormously, and the lowest average per acre now is Rs. 22 for the Bassein town plain area, while Rs. 64 is realized in the narrow strip of fertile land running along the Ngawun embankment.

Here too mortgage values show a very large enhancement as land is now readily accepted as security and mortgage values vary from Rs. 13 to Rs. 34. In the south usufructuary mortgages are less than one-half of simple mortgages without possession, and in the area settled by Mr. Jamieson in 1912—14 mortgages are generally without possession except on the west coast. The distinction between sales and mortgages as it affects the cultivator is a difficult problem. Mention has already been made of the special provision made in 1883 for dealing with Karens. The problem still continues in spite of wider education. Mr. Jamieson says "From the constant flood of complaints received there would appear to have been a considerable amount of sharp practice on the part of the mortgagees in the richer part of the settlement area. Mortgages with possession were formerly more common than they are now and mortgagors were induced to allow the transaction to be shown as a sale in the Revenue Surveyors' Register and were content with an oral promise by the mortgagee to allow redemption at any time."

Agricultural advances. The sale and mortgage statistics show how great is the demand for money but to whatever causes it may be due little advantage is taken in Bassein of loans under the Agriculturists' Loans Act. The highest figure for the last ten years is Rs. 26,100 in 1906-07, but the average for the ten years ending 1913-14 is only Rs. 15,654. When such small amounts are granted uncertainty and delay are inevitable: it is too probable that Township Officers do not seek the additional work and responsibility that a liberal distribution would entail: and in practice it appears that the cultivator prefers to borrow what he needs from the local money-lender whose procedure is simple and prompt.

Co-operative Credit Societies. In view of the conditions prevailing in the district it might have been expected that Co-operative Credit Societies would have made rapid headway. The first Society Thin-gan-daung was formed in 1907-08 with 20 members and a share capital of Rs. 290. The members had increased to 33 and the share capital to Rs. 1,730 in 1914.

Excluding the Kozu Society which has recently been wound up there are 13 other societies of which one was formed in 1908, four in 1909, seven in 1910 and one in 1911. The total membership of the 14 societies is 317 and the total share capital Rs. 35,900. The movement, however, can hardly be said to have taken a firm root and 12 out of the 14 existing societies are composed of Christian Karens, who are bound together by ties of religion, language and race, whereas the Burman villages tend to be mainly collections of people from all over the delta or Upper Burma. Yet the society which appears to have done best, namely, Singu, which, starting in 1910-11 with 14 members and Rs. 330 share capital, has now 41 members, a share capital of Rs. 2,500 and outside capital of Rs. 5,500, is wholly *Burman*. It is said that the Co-operative movement in Bassein has to contend with the undisguised and strenuous opposition of local money-lenders who refuse to accommodate any member of a society.

Agricultural stock.

In 1869-70 in the district as it was then constituted the number of cattle was 33,746 and of buffaloes 78,108: by 1876-77 these had increased to 65,475 and 93,753 respectively. So long as there were large areas of jungle and waste, the buffalo continued to preponderate, and in swampy lowlying areas buffaloes were used almost exclusively for cultivation. It was too the common practice to have fields kneaded when possible by young buffaloes. Cattle disease however seems to have caused great havoc. There were serious epidemics in 1854, 1867, and 1878. In his settlement operations in 1883-84 Mr. Bridges found that 22 per cent. of the cattle had died within four years, while the comparative mortality was 50 per cent. for buffaloes and 15 for bullocks. Again in 1888-89 Mr. Mathews found that at Zayathla cultivators in consequence of losses by disease were replacing their buffaloes with the more hardy and prolific bullocks. During the last fifteen years it was found that in the Ngaputaw township buffaloes had decreased greatly while cattle had increased a little. In the rest of the district buffaloes had increased slightly while cattle had increased by fifty per cent., and this notwithstanding severe epidemics in 1903-04, when there died 13,360 animals worth over four and a half lakhs, in 1905-06 when 17,806 animals worth over seven lakhs died, and in 1910-11 when 8,810 animals worth two and half a lakhs died. The principal diseases are rinderpest and anthrax and the death rate is heaviest in the Bassein subdivision among Arakanese cattle.

The natural increase of stock is entirely insufficient to supply the requirements of the district. Large numbers of cattle are imported every year from the Arakan coast and from Upper Burma. The price of an Arakanese bullock is from Rs. 50 to Rs. 60 and for an Upper Burma bullock Rs. 70 to Rs. 90 but exceptionally good bullocks sometimes fetch as much as Rs. 150. Arakanese cattle predominate in the Bassein subdivision, the Upper Burma breed, which is bigger and stronger but requires more food and attention, in Kyonpyaw.

Grazing-grounds. In the southern area reserved grazing-grounds amount to 19,013 acres, an increase of 543 acres since 1897-98, while in the central and northern area there are now 102,171 acres against 80,037 in 1898-99. In the southern area there are still larger tracts of waste which provide a certain amount of fodder but elsewhere the area is no larger than is absolutely necessary. All grass growing on *kazins* is carefully cut in November and December and straw is preserved everywhere for fodder in the rains.

Pigs. In the south pigs are found in nearly every Karen village and wherever there are Chinamen. In the centre and north pig-breeding is of considerable importance in many Karen villages. Before 1912 there was a very large stock but in that year an epidemic disease, probably swine fever, almost wiped out the pig population. There is little attempt at systematic breeding, though some half-English pigs are occasionally imported from Rangoon.

Ponies. The absence of roads and the numerous creeks and streams render ponies of little use except in the towns. The wealthier Burmans, however, and especially men who have come from Upper Burma have a decided liking for ponies, and in the Ngathainggyaung subdivision, where the ground is generally higher and communication by road easier than in the south, ponies are not infrequent. In 1883 it was estimated that there were 161 mares within easy distance of Ngathainggyaung and in order to improve the breed generally an Arab stallion was sent to Ngathainggyaung in August 1883: though no charge was made, only 17 mares were produced for service up to June 1884, and as it was thought that he would be more useful elsewhere the stallion was withdrawn in July 1884. This was probably the Arab stallion purchased by the Bassein Municipality which was sold in 1886 as there was found to be no use for him. The area of waste ground is now so small and the conditions generally in the delta are such that breeding is impracticable on any large scale. Pony

racing is generally discouraged as lending to reckless gambling and crime, but in the north pony matches are frequent in the hot weather. The ponies are generally imported from Upper Burma and vary enormously in price: those used for gharry and pony cart traffic come mainly from Pakokku and Myingyan and cost about Rs. 100 each. The total number of ponies in the district is now about 1,800.

Agricultural shows. Annual agricultural shows were initiated in 1873 and were said to have been fairly successful: the scheme however was incomprehensible to the cultivators and competition did not extend: every competitor expected a prize and this idea "was partially deferred to at Bassein" where paddy and pottery were the chief features of the exhibitions. In January 1902 a show was held at Kyonpyaw and Rs. 1,277 was distributed in prizes, while the Bassein rice firms gave excellent prizes for market and seed paddy. Plough oxen were the best feature of the show and the experiment was so successful that it was intended to hold similar shows every year at the same place. The outbreak of cattle disease in 1903-04 however prevented this being done and no shows have been held since.

CHAPTER V.

Forests and Minerals.

Physical features—Hill forests—Teak—Bamboos—Reserved timber—Minor forest produce—Revenue—Forest reserves—Working plans—Protection—Improvements—Administration—Forest communications and rest-houses—Kheddah operations—Minerals.

Physical features. While the greater part of the central and eastern portions of the Bassein district is low-lying land on which little or no useful timber grows, there are considerable areas of forest on the west of the Ngawun on both sides of the Arakan Yoma. These forests run the whole length of the district from the borders of Sandoway and Henzada to the sea, and form large uninhabited tracts. In the south are mangrove swamps and tidal forests but their area is small and unimportant.

Hill forests. In the Yomas the forests are for the most part of the moist type and consist largely of *taungthayet* (mangifera),

kanyin (dipterocarpus alutus) and *kanyaung*, but the following species are also found: *pyinma* (lagerstrœmia macrocarpa), *eng* (dipterocarpus tuberculatus), *hman-u* (gardenia erythoclada), *bwegyin* (bauhinia sp.), *zibyu* (Cicea nacrocarpa), *kyunbo* (Premna tormentosa), *gwe* (Spondias mangifera), *zinbyun* (Dillenia pentagyna), *kye* (Semicarpus panduratus), *tauksha* (Vitex leucoxylon), *taukkyan* (Terminalia tomentosa), *thamachok* (Abutilon indicum), *su* (Carthamus Tinctorius), *kyanza* (Toddalia aculeata), *thanat* (Cordia grandis), *baman* (Eleocarpus Wallichii), *aukkyinza* (Briedelia retusa), *taungsaga* (Heptagearborea), *kyaungdauk* (Heteropanax fragrans), *kathit* (Pentace Burmanica), *thitkado* (Cedrela Toona), *talapi* (Ochracarpus Siamensis), *thitchabo* (Cinnamonum zylanicum), *thitpok* (Tetramelis nudiflora), *Thitto* (Sandoricum Indicum), *pentaya* (Calophyllum Spectabile), *thabyu* (Dillenia Indica).

Several of these species also occur in the plains and the low foothills where *pyinkado* (Xylia dolabriformis) is found.

Teak. There is practically no teak inside the forest reserves except in a few plantations which are for the most part failures. Outside the reserves there is a certain amount of teak in fields and gardens and a census taken in 1913-14 gave the number of teak trees as 27,961: the vast majority of these were less than three feet in girth, and most of the trees are misshapen.

Bamboos. Of the vast bamboo growth characteristic of certain forest areas, Mr. Thompson, Deputy Conservator of Forests, wrote in 1897 referring particularly to the Kyetpaung Reserve:—

"*Thaikwa* (Bambusa tulda), *tinwa* (Cephalostachyum pergracile), and *kayinwa* are the principal kinds met with, and the latter especially covers large areas, forming dense thickets of pure bamboo in which no other species has survived the struggle for existence. Even during the middle of the day the sun cannot penetrate these dense bamboo forests and in such places there is no under growth of any kind. Scattered about here and there are more open bamboo forests with *pyinkado* and other trees growing out of them like standards, but even in such places the *pyinkado* has a hard struggle to keep its place among the fast growing bamboos. This remarkable bamboo growth found in the Kyetpaung Reserve and indeed along all the eastern slopes of the Yomas is probably due to the work of *taungya* cutters. It appears that some two hundred years ago these hills were well populated with Taungthus and other

tribes and that the *taungya* system of cultivation was extensively in vogue. Since their desertion the sites of the old *yas* have been overgrown by bamboos to the exclusion of all other species."

Six main species of bamboo are found and their extraction is a subsidiary occupation of large numbers of villagers who live on the west of the Ngawun. The outturn of the bamboos averages 6,000,000 which bring in a revenue of Rs. 18,750. These are rafted to Bassein, where large numbers are used for making mats for the rice steamers, and also to the delta generally.

Reserved timber. The timbers reserved in the district are teak, *pyinkado*, *kanyin*, *kokko*, *kathit*, *thingan* and *pyinma*. Teak as has been noted above does not occur in sufficient quantity or quality to be of importance. *Pyinkado*, however, the chief wood, is common in the lower Yomas both on the east and the west. It is going up in value every year, and the revenue realized from extraction licenses was Rs. 35,200 in 1913-14. The revenue realized from other reserved timbers is small.

Extraction from the Yomas presents no serious difficulties. Hardly any of the timber which has recognized market value will float but logs are brought down the smaller streams lashed to boats, and when a sufficient number have been collected on the banks of the Bassein river or its larger tributaries, such as the Thandwe or the Myittaya, they are made up into rafts with bamboos and floated to their destination.

Much of the timber extracted is used for making the rice steamer ventilators and eight or nine kinds of unreserved timber are worked for this purpose.

Minor forest produce. There is little minor forest produce and of the revenue of Rs. 500, the average for the past three years, about Rs. 490 was realized from the sale of the right to collect edible bird-nests on the west-coast.

Revenue. Timber is extracted under the system of prepaid licenses mostly by petty traders. Figures for the district alone are not available but for the whole division the revenue in 1913-14 was Rs. 98,000: *pyinkado* and 'bamboo' extraction licenses making up the bulk of this, licenses for unreserved woods yielding less than Rs. 1,500. There is little room for revenue expansion and, although *kanyin* and *pyinkado* have in six years advanced in price from Rs. 25 to Rs. 35 per ton in the log, the quantity available is small, the outturn of reserved woods being on an average about 3,500 tons per annum and of unreserved woods about 6,000 tons.

Forest reserves. The reservation of forest areas in the district was not considered a matter of importance till comparatively recently. Kyetpaung, the first area to be reserved, was not notified till 1897, and comprises only 45 square miles. The Myittha reserve of 189 square miles was notified in 1889 and the Shwemyindin fuel reserve of 11 square miles in 1900. The reserved areas are the Kyetpaung, Kyeintali, Kungyaung, Bodaw, and Sitsayan reserves, all in one block east of the Yomas comprising 173 square miles, the Myittaya, Thitpok, and Mezali reserves in one block east of the Yomas comprising 254 square miles, the Shwemyindin fuel reserve of 11 square miles and the Sinma, Chaungtha, and Sinhmon reserves of 200 miles in one block west of the Yomas. The Chaungtha and Sinhmon reserves have been settled but not finally notified. The Shwemyindin reserve is a small area of more or less flat country about eight miles north of Bassein and was reserved for fuel; a few inferior *kanyin* and *pyinkado* trees are found in it, but the bulk of the trees are suitable for firewood only.

Working plans. No working plans have yet been drawn up, but they will soon become necessary owing to the rapidity with which unclassed forests are being depleted of all marketable timber.

Protection. All the finally notified reserves with the exception of the Shwemyindin and the Sinma are protected from fire, and climber cutting, which was started in the Kyetpaung reserve in 1904, is being continued over an area of two to three thousand acres annually.

Improvements. Teak plantations were tried but proved unsuccessful and were discontinued. Improvement fellings for the freeing of promising seedlings and saplings of *pyinkado* have, however, been carried out with success. No experiments to introduce new species have been tried.

Administration. In 1876 all the forests lying between the Ngawun and the sea were reserved by Government and the cutting of some twelve species of trees forbidden except under a written permit. An Assistant Conservator of Forests was in the same year appointed to the western division which was part of the Pegu circle and comprised the Bassein and Myaungmya civil districts. The western division was divided into the Bassein-Myaungmya and the Henzada-Thongwa divisions in 1894, and in 1906 the Pyapon district was transferred to the Bassein-Myaungmya division. The division is in charge of a Divisional Forest Officer and is divided into four ranges with headquarters at Ngathainggyaung, Bassein, Ngaputaw, and Sinma.

Forest communications and rest-houses.

There are as yet few bridle paths: one has been cleared from Kyaukkadin to Wabo, and paths from Ngakwa across the Yomas to Sinma and from Kanyinchaung to Yutpa are projected. Five rest-houses built of *pyinkado* with thatch roofs and bamboo mat walling have been built near the Kyetpaung, Myittya, and Mezali reserves. They are roughly furnished and are put in charge of a man from the nearest village.

Kheddah operations.

Reference has already been made to the herds of wild elephants which make the Yomas their home. The mountain range rises from the low hills in the south and stretches in a vast unbroken line northward for hundreds of miles into the Arakan Hill Tracts. The tract is sparsely peopled throughout and the passes from the Arakan coast to the district west of the Irrawaddy but little used. The elephant thus roams almost unmolested and safe from the weapons of the very few villagers who have guns. At times great damage has been done to crops lying near the hills: a herd of fifty elephants will often in a night trample and destroy ten times as much as they can eat.

Kheddah operations had often been proposed and as far back as 1891 a report on the number of elephants in the district was asked for. It was then estimated that there were one hundred wild elephants frequenting Myittaya and neighbourhood, and small herds of ten to fifteen in other parts of the district. No operations were carried out though licenses were occasionally issued, under which capture was allowed—pitfalls being forbidden—a fee of Rs. 50 was payable for every elephant captured, and Government had the right to take over any of the captured elephants at a fixed price within a certain period of capture.

One female elephant was captured in 1910, seven females and two calves in 1911 by a Kwinbya Burman. Two Indians from Rangoon also took out a license in 1912 but their operations were apparently unsuccessful.

In 1913 Mr. Lim Chin Tsong of Rangoon secured a license for ten years giving him the sole right of capture in the district. Under this license twelve elephants were captured in 1913: of these seven died and one had to be released. In 1914 the operations were carried on with more vigour and no less than twenty-six elephants, six males and twenty females and calves, were captured in January and February. All the captures were made in the Yomas to the east of Nyaungbintha.

Minerals.

The district, as will be inferred from the general and geological description given in Chapter I, is very poor in

minerals. There are no mines and the annual revenue from royalties and fees on minerals exclusive of salt revenue averaged only Rs. 1,400 for the ten years ending 1910 and had risen to Rs. 1,625 in 1913: most of this amount was realized from clay licenses for pottery making which is dealt with in Chapter VI.

At one time hopes were raised that coal would be found near Dalhousie but Mr. Theobald in his Monograph on the Geology of Pegu, wrote: "Some of the sandstones contain carbonised trunks of trees from which specimens of lignite might be procured very likely to lead to fallacious hopes...... such would seem to be the origin of some of the coal said to occur near *Dalhousie.*"

A good deal of stone was secured from Hainggyi for ballast by the railway company when the line was being constructed, but the quarries were shut down after the opening of the line.

In 1909-10 a small company called the Burma Quarries Company was formed and started quarrying operations at the Ayodaya Kyauk-kaing Quarries in the Thabaung circle of the Thabaung township. The quarries are situated some five miles west of the Ngawun and the stone, which is a felsite or a kind of schist, is carried on a light railway to the river bank. The output of stone from these quarries was 7,738 tons in 1912 and 20,215 tons in 1913, and this was all taken by the Bassein Municipality or the Executive Engineer, Public Works Department. Nearly 8,000 tons of laterite were also extracted in 1913 for road metalling. Salt manufacture is dealt with in Chapter VI.

CHAPTER VI.

OCCUPATIONS AND TRADE.

Agriculture—Fishing—Salt—Pottery—Paddy grinding mills—Mat weaving—Umbrella making—Rice milling—Foreign trade—Coasting trade—Transport of paddy—Local trade.

Agriculture. Throughout the district a very large majority of the people depend on agriculture for a livelihood and even in Bassein town the number of people not dependent directly or indirectly on agriculture or its products is not large. In 1911 there were in the district 331,232 workers and their dependents engaged in agriculture out of a population of

440,988. Of the 331,232, cultivating owners and their dependents were 116,192, cultivating tenants 56,110, farm servants and labourers 123,947. Thus 75 per cent. were directly connected with the land, indirectly connected were a large number of coolies, boatmen, cartmen, money-lenders and petty traders; so that 85 per cent. would not be too high an estimate of the ratio of the population dependent on agriculture.

The agricultural tenant and labourer have been dealt with in Chapter IV.

Fishing. Although according to the 1911 Census figures only 10,147 of the population depend on fishing and fish-selling the number does not represent the actual numbers engaged in the industry. Many people supplement their earnings as coolies or agriculturists by fishing: thus in the Thabaung township about one-quarter of the population is directly or indirectly dependent on fisheries for the majority of its income, and in Ngaputaw township fishermen number three per cent. of the population. Fishermen and agricultural coolies as a rule receive about the same pay, and fishery lessees hire their men by the month or by the season of four to six months at rates varying from Rs. 12 to Rs. 15 a month together with food.

Salt. Salt is manufactured on a fairly large scale at Magyibin and neighbouring villages on the Thongwa Island. The occupation is however subsidiary to agriculture and most of those engaged in the industry are returned as agriculturists or coolies. If the cultivator has a large family he manufactures salt with their aid: if not, he engages coolies for the purpose. At the 1911 Census 218 men and women were returned as wholly and 30 as partially engaged in salt manufacture.

In the middle of last century Bassein was one of the great salt manufacturing centres. In 1854 16,000 pots were worked and were estimated to yield about 182,000 maunds, one-third of which was exported across the frontier. Taxation was introduced in 1862 and the rates were raised from time to time but it was found that local salt manufactures could undersell imported salt. In 1898 Mr. Ashton of the Northern India Salt Department was deputed to Burma to report on the local industry and he came to the conclusion that local manufacture of salt should be suppressed as concentration was impracticable and efficient supervision not feasible. Rates have since 1889 been frequently changed as noted in the chapter on Revenue, but, whereas 149 cauldrons in 1896 produced only 61,055 maunds, 115

cauldrons in 1907 produced 128,500 maunds: in 1913 the number of cauldrons was 125 and the yield 135,582 maunds. Manufacture is confined to a few villages. The following description of the method of manufacture is compiled from Mr. Thompson's note in the Salt Administration Report for 1900:—

"A tidal creek is selected of sufficiently small size to permit of its being closed by a weir as soon as the rains are over. In the month of December a stout weir some three yards thick is built across the stream. . . . . It is provided with a sluice which is opened at high tide so as to admit water above the weir and is closed again as soon as the tide falls. By this means the water in the creek above the weir is always kept at high tide level and in some cases four or five of these weirs are found along a creek. The water above the weir is raised by means of a water wheel with bamboo buckets worked by buffaloes and flows over a number of fields where it is partly evaporated. The majority of the licensees use ten fields in all of an average size of rather more than half an acre each for evaporating purposes. The water is pumped into the first field known as *ku-ein* every morning and evening. From this it is run once a day into three fields known as *ye-bu-gale*, thence on every second day into three more fields known as *ye-bu-gyi*, and finally into the three last fields known as *sa-kan*. From these the brine is run into a storage tank. The cauldrons used for boiling are in a shed next the storage tank and alongside is another shed for storing the tank."

The season begins in November when four men are engaged to repair the bunds, water wheel, and shed, and to plough and weed the fields. In February when the water has become brackish enough for boiling purposes the original four men are paid off and two engaged to work the cauldrons. Another man looks after the pumping and several works generally subscribe together to hire a man whose duty it is to open and close the weirs. Boiling goes on from February to October.

In the early days earthen pots containing about six gallons were most in use but they have been entirely replaced by iron cauldrons three or four inches deep, from three to five feet in width and containing about sixty gallons. The salt manufactured is soft and fine grained, but the price of local salt is generally less than that of foreign salt. The profits of manufacture were estimated by Mr. Wingate and Mr. Thurley in their 1908 Report to be 4⅓ annas per maund

or Rs. 1,405 per factory while all the twenty-five salt boilers were assessed to income-tax. At the same time they found that all the manufacturers were in debt Rs. 1,000 on an average. It is thus difficult to ascertain the exact income of salt boilers. Labourers are paid Rs. 15 to Rs. 20 a month together with food and the cost of producing 6,000 maunds of salt was said to be Rs. 3,230 of which the main items were cauldrons Rs. 200, labour Rs. 1,017, firewood Rs. 1,700.

The local salt is exported largely to Wakema, Pantanaw and Yandoon, and is preferred for curing dried fish and *ngapi-gaung* owing to the fact that the crystals melt more readily and saturate the fish sooner than the foreign salt crystals. For the manufacture of *ngapi* however foreign salt is preferred because the salt is harder and there is less loss by wastage.

The local salt has to compete with foreign salt mainly from Germany and Aden or India. Direct imports of foreign salt into Bassein have stopped since 1910 owing to high prices in and high freights from Europe. Yet the price of local salt fell from Rs. 2-10 per maund in 1911 to Rs. 1-7 in 1913; the prices being slightly less than those for foreign salt, which is preferred for domestic consumption.

There was formerly a considerable trade in "Ondon salt". This was local salt mixed with the bark of the "Ondon" tree which to a great extent prevents sweating and consequent wastage and the salt was therefore in demand for fish-curing purposes. The process took time and as under the present system the salt boiler can only have access to his salt while the Inspector is present, the manufacture has ceased.

Pottery. Pottery is an industry which shows no signs of declining and there are very few houses in the large and important villages of Kwinlya lying on the right bank of the Ngawun about ten miles below Ngathainggyaung which do not make pottery. The pots made are of the commonest and cheapest kind, water pots, cooking and curry pots, *kauk-hnyin* pots, pot covers, and small dishes known as *sale-win-oh* and *ngapi-kyet-oh*. None of this pottery is glazed and there is no attempt at any decoration except of the crudest kind. The tools used and the method of working are simple. The clay is obtained mainly from the low-lying land in Taung-kyaung kwin some miles away and is wetted two or three times a day for five or six days: it is then mixed with sand in the proportion of one part sand to two or three parts clay and is thoroughly mixed and

tramped with the feet. This mass is then kept in a damp state under the house near the wheel and when pot making is proceeding lumps of three or four viss weight of this mass are taken and thoroughly kneaded by hand. The mixing, tramping, and kneading are done by men. In the pot making itself two women are generally engaged—one turns the wheel, the other takes the kneaded clay and quickly fashions pot after pot on the wheel. As it is fashioned on the wheel the pot is thick, heavy and only about half the size it will eventually become. This roughly fashioned pot is put in the sun to dry for an hour: it is then taken by the woman worker who holds it on a rounded boss of wood in her left hand and beats it with a slightly corrugated piece of wood about an inch thick and three inches square held by a handle. The pots are fashioned very quickly on the wheel but the beating is a long and laborious process. When beaten the pot is again dried in the sun for a short time and then piled with others till sufficient have been made for a firing. Two women will complete 40 water pots, 70 cooking pots, or 100 smaller pots in a day. One firing will contain 600 water pots, 3,000 cooking pots or curry pots, and 4,000 or 5,000 of the smaller kinds. One man and two women working together will make enough for the firing in a month to a month and a half. When the pots are ready for firing straw and wood have to be bought or otherwise obtained. The wood is brought from a considerable distance usually three or four miles and costs if bought about Rs. 6 for a firing. The straw in which the pots are packed for firing may cost eight annas. The pots are stacked in straw, covered, and fired for eight hours, and then allowed to cool off for a day. In two or three out of every hundred firings the whole firing turns out useless, but as a rule, about two-thirds or three-quarters turn out good marketable pots: the remainder will be flawed. The pots are then stored near the potter's house. The pottery commands a ready sale throughout the Irrawaddy delta and has to a certain extent displaced Twante pottery. The potter if wealthy generally owns a boat and will take his pots to other places for sale, often exchanging pots for paddy. If he has no boats he waits for purchasers who buy water pots at Rs. 5 to Rs. 7 per 100, cooking and curry pots at Rs. 25 per 1,000, smaller kinds at Rs. 12 to Rs. 15 per 1,000. Kwinlya village is flooded in the rains so that no work can be carried on then. Work begins in *Tazaungmon* and continues till *Tagu* and *Kason*, so that the normal output of a man and two women will be three or

four firings. The price of pots is highest about *Pyatho* and falls quickly in *Kason* when the potter has to get rid of his stock.

At Sin-o-bo in the suburbs of Bassein town glazed earthen jars known as Pegu jars, basins, flower vases, chilli-pounding mortars, and small pots and pans for pagoda offerings are the principal articles made. Of these Taw Sein Ko in his Monograph on the Pottery and Glassware of Burma, 1894-95, remarks: "The vases and goblets or *sarais* possess some artistic merit. Flower pots recalling somewhat the 'trisul' emblem of Buddhism are made in Bassein town, where the double potter's wheel is in use." The clay, for the extraction of which Rs. 10 a year per workman is paid as Sin-o-bo falls within Municipal limits, is obtained in the neighbourhood and after being modelled the article has a thin coat of glaze applied. This glaze or 'chaw' is derived from slag obtained from the Bawdwin lead mines in the Northern Shan States. At Sin-o-bo, but not at Kwinlya, the kilns are of masonry and vary in size, an ordinary kiln being about 20 feet long, 12 feet broad and 10 feet high in the centre: the roof has much the appearance of a large unkeeled boat turned upside down. There is a good local demand for the jars, which are used for storing *ngapi* and sessamum oil, and many buyers also come from the Akyab and Kyaukpyu districts.

Paddy grinding mills.

At Paya-u-bauk and neighbouring villages about eight miles below Thabaung there is an interesting village industry, namely, the manufacture of ordinary rotary paddy grinding mills worked by hand. It was first introduced about six years ago by an immigrant from Shwebo district and has now taken firm root. A mixture of five parts dried pounded mud, four parts lime, and one part salt is put in woven bamboo coverings and the grinding surfaces are corrugated by bamboo strips placed in the composition while still moist. The mixture sets like iron and the completed mill finds a ready sale at Rs. 3 each.

Mat weaving.

Fine mats of the 'thin' reed obtained from the Ngaputaw township are woven at Tantawgyi in the Bassein township, and on the Daga near Kyeinchaung a settlement of twenty-five houses from Alon in the Lower Chindwin district devotes its whole time to the manufacture of coarse bamboo mats. Mat and basket weaving is also an important industry at the village of Kanni in the Ngaputaw township.

Umbrella making.

Bassein is noted for its umbrellas which are sent to every

part of Burma. Umbrella making has been a Bassein industry for nearly fifty years: it began with the manufacture of paper umbrellas by men who came from Prome. Design and material were gradually improved and the name of U Kyauk Lon, the superiority of whose umbrellas was acknowledged, was known all over Burma. The industry though very profitable is confined to about twenty families in the Ywebo, Talainggyaung, and Danidan quarters of Bassein. In the modern umbrellas the handle is of *Kayin* bamboo, the ribs of *Talegu* bamboo from Thabaung township. The covering of all the common umbrellas is of cotton cloth which after being stretched on the frame is treated inside and out with a mixture of wax and sessamum oil. The best umbrellas are covered with silk, a pattern in outline is stamped on by a wooden block, and this pattern is painted in with various colours. The paper for edging the umbrella and for covering the ribs is Chinese paper treated with the liquor obtained by pounding and boiling *tethi*. Ordinarily four men and a woman work together. The cheapest umbrellas cost about Rs. 2, the best silk umbrellas about Rs. 15.

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lling.

Very soon after the British occupation the trade of Bassein attracted mercantile firms. Messrs. Meade and Company one of the first firms to settle in Bassein are said to have imported the first batch of Madras coolies about 1855. Up till 1859 only manual labour was employed, but in 1860 Messrs. Bulloch Brothers introduced steam. By 1865 the other important firms in Bassein were Messrs. Macmillan Halliday and Company, Mohr Brothers, Ogilvie Hay and Company, Todd Findlay and Company. The first great rise in prices was caused in 1874 by the large demand for rice consequent on the famine in Bengal. In 1875 the merchants made a stand against the Burmese boatmen and reduced the price to Rs. 50 per 100 baskets. In 1877 the price rose again owing to the Madras famine and rose steadily so that up to 1880 the price was generally considered as Rs. 100 per 100 baskets. In 1880 there were seven rice mills in Bassein. From 1886 to 1889 however there occurred a very serious decline in trade and imports fell from one and three-quarter lakhs in 1885-86 to Rs. 58,000 in 1888-89, while exports fell from 105 to 50 lakhs. In November 1889 a committee consisting of the Commissioner, Deputy Commissioner, Port Officer, and the rice merchants met to consider the situation. Their main recommendations were to extend the cut in the Ngawun in the Lemyethna and Chauk-ywa neighbourhood northwards

to cause a scour in the Irrawaddy and thus prevent the silting of the upper reaches of the Ngawun, to put down the adulteration of the grain, to encourage the introduction of *Nga-sein* paddy from Pegu, and to increase the dues paid by the Irrawaddy Flotilla Company. In 1889-90, however, imports and exports increased to four and eighty-four lakhs respectively and though fluctuations occrrued from time to time the upward tendency has been well maintained. In 1914 there were in the district fifteen rice mills, four saw mills and one foundry and ice factory employing twenty or more operatives. There are also several smaller rice mills at various places in the district. The principal European firms now engaged in rice milling are Messrs. The Arracan Company, Messrs. Bulloch Brothers, the Burma Rice and Trading Company, Messrs. Mohr Brothers, and Messrs. Steel Brothers and Company. Each of these firms is controlled by a European Manager, and has one or more European Assistants and Engineers. The average daily number of employees in the industries which come within the scope of the Factory Act is 3,673 in the rice and 132 in the saw mills: of the employees 3,790 were men, and the 15 women employed were engaged only in stitching bags. No children were employed. In the year 1913 there was no accident nor was there any conviction under the Factory Act.

As previously noted the first great rise in paddy was caused in 1874 by the large demand for rice consequent on the famine in Bengal. In 1877 the price rose again owing to the Madras famine and continued to rise steadily, so that up to 1880 the price was generally considered as Rs. 100 per 100 baskets. The continuation of this high price did not depend so much on local conditions as on the general trade of the world. As long as freights remained low and the rate of exchange did not rise, European firms could afford to pay a high price in Indian coin and still make a profit. The rice manufactured was up to 1907 mainly of the kind known as cargo rice, one-fifth part of husk being left in the milled product: the principal markets to which it was exported were Rotterdam, Zaandam, Amsterdam, Bremen, Hamburg, Antwerp, Fiume and Trieste where the bulk of it was converted into gin and other alcoholic liquors or re-exported to South America.

Since 1907, however, white rice has been milled in steadily increasing quantities. In white rice there is no husk and the inner skin of the rice is taken off. In 1913-14 nearly half the rice exported was white rice.

oreign ade. The trade of Bassein had been extensive even in the sixteenth century when Ralph Fitch visited Burma. No records are available to show the conditions in Burmese times but by 1861 the Port establishment consisted of a Master Attendant or Harbour Master who controlled the buoy-vessel and several boats, and the pilots. All vessels paid dues at the rate of four annas per ton, and in 1861-62 no less than 83 vessels with a tonnage of 29,606 left the port. Rice was practically the only article of export: out of exports value Rs. 10,72,968 rice and paddy were valued at Rs. 10,10,568: 33,757 tons valued at Rs. 9,09,596 were for the United Kingdom. Ships became bigger and trade steadily expanded so that by 1872-73 the tonnage leaving the port was 57,088 tons in 98 vessels. A large proportion of these vessels which were mainly square-rigged craft were under the Italian flag. In 1872-73 the shipments of rice to Europe were about 72,769 tons and the price was about Rs. 52-8-0 per ton free on board the vessel. The quantity of machinery increased steadily year by year and in 1880 it was reported that milling charges which had formerly been twenty to twenty-five rupees per ton had fallen to eight and ten rupees. Bassein had by 1880 taken third place as a rice exporting centre with an export of 154,336 tons against 172,805 tons from Akyab and 60,648 tons from Moulmein. The opening of the Suez Canal in 1869 and the increase in steam-vessels had stimulated trade and by 1880-81 there were 27 steam to 67 sailing ships and the number of rice mills had increased to seven. Europe took more and more rice, and it is interesting to note that freights for sailors in 1881-82 were from Rs. 22-8-0 in January to Rs. 31 per ton in April. Cultivation steadily extended and the export rice trade to Europe has shown remarkable variations; in 1885-86, 190,549 tons were exported to Europe, in 1888-89 only 86,102 tons. On the other hand in 1893-94 when only 88,000 tons were exported to Europe rice to the value of Rs. 3,40,299 was sent to India. Between 1894-95 and 1904-05 the rice exported to Europe averaged 144,646 tons per annum.

The opening of the railway in 1902 increased the area from which supplies could be drawn by opening up quick traffic communication with Henzada. Hence in 1908-09 the rice exported was 89,819 tons, in 1909-10 258,422 tons, and in 1912-13, 330,801 tons, the average for the last five years being 275,263 tons. The total value of the exports from Bassein in 1913-14 was Rs. 3,50,67,014 and of this the rice was worth over 300 lakhs and amounted to

over 320,000 tons, carried in 68 steamers, of which the average tonnage was 2,839 tons, and some small coasting vessels. Rice was the only important article of export and the figures below will show to what countries the rice was exported.

Value of rice exported.

Year.	Germany.	Austria-Hungary.	Holland.	Roumania.	United Kingdom.
	Rs.	Rs.	Rs.	Rs.	Rs.
1908-09	79,72,035	17,14,325	50,67,782	...	2,94,208
1913-14	81,63,265	30,38,116	1,25,44,062	20,85,329	22,61,690

Bassein is not a distributing centre of any importance so that direct importation of foreign goods is small. The great bulk of the foreign goods used to come from Rangoon by Irrawaddy Flotilla steamers, by boats, or by rail. Under coasting trade returns the imports in 1913-14 are shown as amounting to Rs. 74,412 from provincial ports in Burma, from Indian ports Rs. 1,52,298, and from foreign ports Rs. 6,017. These comprise mainly manufactured articles, European provisions, tea, sugar, and articles of food and drink generally.

Coasting trade. The coasting trade is normally of small importance and compared with foreign trade the figures are :—

Year.	Foreign trade.		Coasting trade.	
	Imports.	Exports.	Imports.	Exports.
	Rs.	Rs.	Rs.	Rs.
1903-04 ...	46,200	1,03,87,843	88,508	1,247
1913-14 ...	6,017	3,05,82,107	2,26,710	44,91,607

The coasting trade exports for 1912-13 were Rs. 17,10,116 and the abnormal figure for 1913-14 is due to

exports of rice valued at Rs. 44,78,460 to India. Rice and a small quantity of timber make up almost the whole of the coastwise exports but the variations are so great from year to year and rice predominates so greatly in foreign and coast trade exports that the figures are of little importance.

Coastwise imports are of a very varied character and included vegetable oils, ghee, gunny bags, sugar, cotton twist, and yarn. The principal ports from which they are derived can be judged from the following table:

—	Burma.	Bengal.	Madras.	Bombay.
1913-14.	Rs.	Rs.	Rs.	Rs.
Value of imports ...	74,412	1,52,298	...	...
Value of exports ...	...	5,47,431	7,07,025	31,95,254

On the whole there has been year by year a marked falling off in both foreign and coasting imports into Bassein. This is accounted for partly by smaller supplies of salt from Hamburg and partly by the gradually increasing practice of drawing supplies almost exclusively from Rangoon by the inland steamers of the Irrawaddy Flotilla Company, and by the railway.

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Mention has been made of the impetus given to the transport of paddy by the opening of the railway. The bulk of the paddy, however, still reaches Bassein by boat. There are two main types of boat, the so called *hpyat-paing* or paddy gig owned by millers and hired out to middlemen at a fixed charge per day, and secondly the privately-owned Burmese boat. In appearance the *hpyat-paing* resembles a small Thames barge, and is usually manned by Coringhi coolies, and carries from 1,700 to 1,800 baskets. Burmese boats are of two kinds, the *laung-sat* carrying 2,500 to 4,500 baskets, and the *laung-go* carrying about 1,800 baskets. The *laung-sat* is the picturesque craft with the high and richly carved stern but it is clumsier and slower than the *hpyat-paing* and is slowly dying out. The boats used for voyages to the west coast are known as *kattu* and have two masts with lateen sails: they carry on an average 1,000 baskets. It is estimated that the paddy landed at Bassein in 1913

was about 526,000 tons of which over 400,000 tons was carried by boats. These figures of course include paddy from Henzada, Ma-ubin, and Myaungmya. The boat traffic has now in many places to meet railway competition, as the line has not only sidings at every station on the line but is also connected by sidings with the principal mills on the river front in Bassein. Country previously landlocked has been opened up and low rates have been fixed in order to foster traffic, with such success that the railway imports of paddy jumped from 70,634 tons in 1911 to 123,600 tons in 1913. Most of this was from outside the district, but from the district itself the railway carryings increased from 23,142 tons in 1911 to 34,180 tons in 1913. Unless much extra expense is involved, however, boat transport is generally preferred for various reasons chief of which is the belief that paddy sent by rail loses less weight in comparison with that sent by boat.

Local trade. The centre of local trade is always the bazaar. Bassein is the distributing centre for most of the district but large quantities of goods are bought in Henzada for the north. Ngathainggyaung and Kyônpyaw as minor centres have the advantage of Irrawaddy Flotilla steamer services throughout the year while they are also within a few miles of the railway. A great amount of trade is carried on by boats, Upper Burmans bring oil from Myingyan and elsewhere. Burmans of the eastern delta bring *ngapi* and salt, and Bassein boatmen take pottery or lime to many parts of the delta and bring back paddy or other produce.

CHAPTER VII.

MEANS OF COMMUNICATION.

Roads—Railways—Water communication—Irrawaddy Flotilla Company—Other launch and boat traffic—Ferries—' Bedabu '—Pony carts and motor omnibuses—Government launches and house boats—Rest-houses—postal services—Telegraphs—Alguada Reef light-house.

Roads. As in all deltaic districts communication and travelling in the Bassein district is almost entirely by water. The Ngawun is the great channel-way and runs right through the district almost due north and south. It has numerous large and important tributaries and these larger channels are again linked with each other by numerous smaller

creeks. Then the whole district with the exception of the Arakan Yomas and the high ridge in the north-east of the district is practically a mesh-work of water-ways, all leading to and terminating in the main Bassein river.

It is thus natural that the roads should be few and unimportant, and, except in the neighbourhood of Bassein, metalled roads are conspicuous by their absence. Of Public Works Department metalled roads bridged and drained throughout there are only 31 miles. The Bassein to Shanywa road about 3½ miles in length connects Bassein with Shanywa, an important village lying to the south-east of the town. The road from Ngathainggyaung to Henzada runs from Ngathainggyaung to the railway station at Yegyi, thence to Kyônpyaw, the headquarters of the subdivision, thence to Ataung, an important and wealthy village a little to the north-east of Kyônpyaw: a few miles from Ataung it crosses into the Henzada district, 27 miles from its beginning at Ngathainggyaung. Though it is nominally metalled and bridged throughout, the metalling, which is almost entirely laterite and burnt clay lumps (dilon), is of a crude description and the state of the road in the rains from Ngathainggyaung to Kyônpyaw where traffic is heavy is far from satisfactory, while at Kyônpyaw too there is no bridge to cross the Daga.

The only Public Works Department road of importance is the berm road along the Ngawun embankment which runs for 36 miles in the Bassein district.

Of District Cess Fund roads there are some 40 miles metalled, bridged and drained; that from Bassein to Kozu about 5 miles is metalled with stone and laterite, and the road to Shwemyindin of about the same length is laterite only.

The Pandaw-Athok road 10½ miles in length, connects the important railway village of Athok with the Ngathainggyaung-Kyônpyaw road, but it is metalled with 'dilon' only. From Kyônpyaw there is a short road of 3½ miles to Thaungywa metalled with broken brick.

The District Cess Fund has also several feeder and connecting roads which are bridged and drained but not metalled: they are of assistance as approaches to railway stations and their total length is about 45 miles. There are some proposals for extending the roads in the district, of which the most important are those from Athok to Talokkon 12 miles in length to open up the country between Athok and the Daga and to connect Kyaunggon with the railway, from Kyeinchaung to Kyaunggon 15

miles long, and from Oba to Inye eight miles long to form a chain along the Daga. The question of building the 20 miles road from Athok to Tigyaung *viâ* Apinhnitse which has been surveyed is being held in suspense pending the settlement of the Daga loop line railway and the clearing of creeks to open them to navigation. There is also a proposal to construct a road 18 miles long from Shangwin to Wagyi: this would cross the Arakan Yomas and connect the west coast with Bassein. Unless, however, properly metalled roads are constructed they are of little advantage: as the Settlement Officer remarked in 1898; "the Burman much prefers a common *kwin* track to the heap of loose earth and dust which an unmetalled road supplies, dangerous to the health, both of man and beast, and only of any real value during the first few weeks of the rains, and again in November and December when there is really no traffic." The great hindrance to the provision of good metalled roads is the cost of stone and it is for this reason that only the roads in Bassein and neighbourhood have been properly metalled. When sailing ships were numerous stone was used in large quantities for ballast and it is on record that up to 1881-82 the price paid to ship captains was only from two to four shillings per ton for ballast delivered into boats. Full advantage was taken of this by the Municipality, but, as has been noted in Chapter XI, this source of supply dwindled, and though occasional cargoes of Bombay trap were brought to the port up to 1910 they were all bought up by the Municipality, the Public Works Department having to depend entirely on laterite and 'dilon.' In 1910 the Burma Quarries Company opened quarries at Shawbyazeik and though the stone is delivered at the river bank 25 miles above Bassein at the rate of Rs. 20 per hundred cubic feet, breaking and transport charges bring the cost up to fifty rupees by the time the stone is spread at a place like Kyônpyaw. Until, therefore, metal and transport become cheaper first class metalled roads cannot be provided except on a small scale. There have also been great difficulties in providing for proper consolidation, but the supply of a steam-roller in 1914 has done away with this. The whole of the road system is however but complementary to rail and water communication and naturally it is to the north of Bassein that almost all the roads have been made and are required.

There is only one railway line in the district running from Bassein through Daga, Athok, Yegyi, Zayathla, and

Daikpyet to Henzada. The question of a railway to Bassein had been first discussed about 1881, and in 1883 Mr. Robert Gordon, Superintendent of Works, in a long memorandum pointed out the desirability of connecting the proposed Bassein railway system with that at the other side of the river. He suggested a main line running to a point a little north of Danubyu, large freight steamers to carry complete trains across to Sagagyi, and thence the continuation of the main line to Intaya, Hlaing, and east to join the Irrawaddy Valley State Railway. The distance from Rangoon to Bassein by this route was 160 miles. He also suggested a number of "Milan trainways" as feeders to the main line. Mr. Mathews, Engineer-in-Chief of the Burma State Railway, in 1884 reported that the proposed line to Henzada would be 86 miles long and would pass near land producing 84,000 tons of paddy. He estimated that the carriage of paddy or rice would comprise 56 per cent. of the goods receipts of the railway, and in his estimate provided for an iron railway wharf, five barges, a steam launch, and a steam barge with grain elevator. It was anticipated that the railway after being opened five years would pay $5\frac{1}{4}$ per cent. The line appears to have been roughly surveyed and it was suggested that, it should be connected with the Prome line. Little however was done till 1897 when the project was revived and the Chief Engineer, Public Works Department, put forward a new scheme. By this a main line was proposed from Insein to Bassein passing through Yandoon, with branches to Henzada, Kyônpyaw and Ngathainggyaung, and Myaungmya. The advantage of this was that the main line would be only 105 miles. Fears were expressed that such a line might ruin the port of Bassein by diverting trade to Rangoon, but these were held to be groundless. Finally, after long discussion it was decided to construct the railway on the line now taken, from Letpadan to Henzada and Bassein: the Government of India sanctioned the project in January 1900 and construction was begun in 1900. The Henzada to Bassein line, $82\frac{1}{2}$ miles in length, was opened on 15th December 1902 and has effected an almost revolutionary improvement in means of communication. The line for the greater part of its length taps country remote from both the Ngawun and Daga, and the facilities now afforded, both for passengers and freight, have attracted new settlers and led to a considerable increase of cultivation, especially in the eastern portion of the Thabaung township. There is communication with Henzada twice

and with Rangoon once a day, but the timing of trains, particularly in the paddy season, when huge mounds of paddy waiting for transport are seen at every station, and in the months when fogs delay the steamer ferry at Henzada is very erratic.

Water communication.

Thus until the opening of the railway almost the only means of communication within or without the district were by water. Already in 1862 the principal sea ports were connected by steam communication, but the service was variable and up to 1872 even the mails were carried by boat.

Irrawaddy Flotilla Company.

In 1872-73 a weekly steamer service from Rangoon was inaugurated by the Irrawaddy Flotilla Company. This was developed into a bi-weekly service in 1875 and now no less than six steamers a week are employed. The Ngawun river service was started in 1882 and up to 1890 steamers were run all the year round from Bassein to Henzada. Through communication then became impossible, except in the rains, owing to the silting up of the river, and now steamers run only as far as Ngathainggyaung from November to June. The Bassein-Kyônpyaw service was commenced in 1893 with the old steamer "Pathein" with a European in charge, three times a week: a daily service was commenced in 1906 Finally, the Bassein-Myaungmya service was commenced in 1904 and a regular daily service is now in operation. At one time a service to Pyinkayaing was maintained, but has been abandoned for over ten years.

Other launch and boat traffic.

The Irrawaddy Flotilla Company now confines its services to the important routes and has altogether some six launches running within the district. It leaves the other services to the small firms. Of these the most important is G. H. Acha & Co. which has twelve launches plying mainly in the south of the district: this firm has lately been meeting with Chinese opposition.

So called 'Chetty' launches fifty or more in number are owned mainly by Indians and run between the larger villages not only on the main rivers but also on nearly every navigable side creek. They carry passengers only and though they appear none too safe, and are small and dirty, they are generally crowded to their utmost capacity.

Besides the steamers and launches there are large numbers of boats of all kinds on the water-ways, from the 'Kattu' which sails to the west coast and the large picturesque Burmese boats to the sampan and the dugout. Sampans owned and worked by Chittagonians can be hired at almost every large village and the dugout is

procurable everywhere. Indeed, in most villages in the flooded areas almost every householder owns a boat.

Ferries. Ferries are naturally required in many places in a country so cut up by creeks, and no small part of the income of the Municipalities and District Cess Fund is derived from the leasing of these. There are in all twenty-two leased ferries, of which ten cross the Ngawun, six the Daga, four the Yegyi, and one the Bawmi river. Seven of the ferries are within Bassein Municipal limits.

Bedabu.' It will thus be seen how important it is to keep open the communications by water. Mention has already been made of the stopping of steamer connection with Henzada in the dry weather by the silting up of the Ngawun. A still more serious hindrance to all water communication is the spreading of the weed known as *bedabu* of which the following account is taken from Mr. Jamieson's Settlement Report: "It is a species of water hyacinth with a mauve bloom and somewhat thick fleshy bulbs and leaves. Known in the United States of America it is also said to be one of the principal constituents of the Nile sudd. It has only become a serious nuisance during the past two years, but in this time it has almost entirely driven out the indigenous weed known as *hmaw* which was a much smaller plant resembling a young lettuce in appearance. The origin of the *bedabu* is uncertain, but it has spread with alarming rapidity, and during 1913-14 some stretches of the Daga were almost completely choked for several miles. The result has been to interfere seriously with paddy gigs and sailing boats, the delay in some cases amounting to a month or more. Between November 1913 and April 1914 energetic attempts were made to deal with the weeds by means of bamboo booms, the plants collected being hauled up on the bank: by May however the condition of the Daga was as bad as ever. Nothing definite seems to be known regarding the life history of the plant or the conditions favourable to its growth though it seems to favour semi-stagnant water and does not flourish in the strong current of the Ngawun."

ny tor and ts nibuses From Yegyi to Ngathainggyaung and to Kyônpyaw pony carts ply and take passengers at one rupee a head, while in Bassein town the Municipality licenses some seventy-five gharries which may be hired at eight annas per two miles. There are also belonging to the Bazaar Association two motor omnibuses of a low-hung type which run regularly in the Municipality between the Bazaar and Kungyan and Mata.

Owing to the difficulties of communication house-boats and steam-launches are provided for officials. There are altogether eight Government launches under the control of the Port Officer and three house-boats. **Government launches and house-boats.**

Public Works Department bungalows are naturally not very numerous in a district with so few roads. There are only four, namely, at Ataung, Kyônpyaw, Kyonta, and Kyaunggon. There are also a circuit-house at Bassein, sixteen District Cess Fund bungalows which have since 1911 been put under the control of the Public Works Department, and five small bungalows which are still under the control of the Deputy Commissioner. The Forest Department also maintains five forest rest-houses near the forest reserves, two at Yegin and Taungchaung in the neighbourhood of the Kyetpaung reserve, two in the Myittaya, and one near the Mezali reserve. In every village of any size are to be found *zayats* which are seldom used by the pious founders and are free to any traveller who cares to use them. The most useful of their kind are the five *zayats* which span the roads in many places in the neighbourhood of Zayathla and furnish shade and a halting place to man and beast alike. **Rest-house.**

The mails to Bassein were up till 1872 carried by boat. In 1872-73 a weekly mail service by steamer was arranged and this was developed into a bi-weekly service maintained by steamer and boat alternately up to 1875. The needs of the district were however increasing and a district post office had been opened at Ngathainggyaung in 1875. After 1st December 1875, therefore, steamers alone were employed in carrying the Rangoon mails, and the mails were carried in this way up to 1903 when railway communication was opened with Rangoon. The bulk of the mails are therefore carried by rail, but they are still carried by Irrawaddy Flotilla steamers to Thabaung, Kyaunggon, Kyônpyaw, and Myaungmya. **Postal services.**

The district postal service maintained by the District Cess Fund was discontinued from 1st April 1906, and all the services are now maintained by Government from Provincial Funds.

In Bassein town there are besides the head office a sub-office in Athegyi quarter and two branch offices on the right bank of the river. There are also sub-offices at all township headquarters and at Yegyi, while there are branch offices as Athok, Kangyidaung, Pyinkayaing, and Daunggyi.

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raphs.

The telegraph service which is also maintained from Provincial Funds was started in 1874 by the extension of the line from Henzada to Bassein. The first office in the district was opened at Bassein on 2nd February 1874, and in 1877 it was decided, on the recommendation of the commercial community, to establish a telegraph station on Diamond Island. This was carried out, a cable from Pagoda Point to the Island being laid and the telegraph office opened in December 1877. It was closed for a time but was re-opened in 1884-85 and became very popular as a place of call for ships from the Cape and Japan and the East generally for orders. On the introduction of wireless telegraphy the advantages of Diamond Island as a centre were quickly recognized. The telegraph line was abandoned, wireless installations were put up at Diamond Island and Bassein, and communication has been maintained with Port Blair and Colombo. The installation at Bassein is to be discontinued on the completion of a station at Rangoon, and Diamond Island will henceforth communicate with Bassein by way of Rangoon.

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Reef
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ouse.

The coasts of Burma were noted for the danger they caused to mariners, and a few years after the annexation of Pegu it was decided to erect a light-house on the Alguada Reef, a dangerous reef of rocks about 11 miles south-south-west of Diamond Island and 21 miles from Cape Negrais, level with the surface of the sea, and extending north and south about one and a quarter miles with outlying and detached rocks at a considerable distance from it. Two years were spent in preparation and the light-house was begun in February 1861: the work was designed by and carried out under the orders of Lieutenant-Colonel A. Fraser of the Royal Engineer Corps. Considerable difficulty was experienced in procuring proper labour and the stone had to be brought from an island on the Tenasserim Coast. The structure is of large blocks of sewn granite in alternate black and white bands and cost about Rs. 10,00,000. The tower is 160 feet in height from base to vane and has ten stories above the solid base some thirty feet above the rocks. Up to 1902 it had a first class Catadioptric Holopphotal light elevated 144 feet above the level of high water, revolving once a minute and visible for 20 miles. This light reported in 1868 to be "one of the most perfect lights in world" was in 1902 replaced by a light of 97,000 candle power visible for 18 miles.

CHAPTER VIII.

FAMINE.

With a rainfall averaging 100 inches and which has not fallen below 78 inches since observations have been taken, the whole of the district is self-supporting and is absolutely secure against famine. Heavy flooding in the Thabaung township has caused temporary inconvenience in the past, but this is very far removed from famine in the Indian sense; even in the worst years it is unlikely that the crop of the district as a whole will ever fall below the present normal supply, a standard which, after satisfying all local requirements, leaves enormous quantities of grain available for export.

CHAPTER IX.

GENERAL ADMINISTRATION.

Territorial changes—Early administration—1880—District Officer—Village-tracts—General administration—Civil justice—The Bar—Registration—Criminal Justice—Honorary Magistrates—Crime—Police—Jails—Surveys—Cadastral Survey—Supplementary Survey—Public Works Department—District Cess Fund—the Port.

Territorial changes.

On the annexation of Pegu in 1852 the Bassein District was formed out of what had been the Bassein Governorship during the Burmese time, but there was added to it a strip of country, up till that time a portion of Sandoway, extending along the sea coast west of the Arakan mountains as far north as the Kyeintali stream and divided into two townships. In 1864 it was found that the northern of these two could be better supervised from Sandoway and the boundary was brought south to Gwa. To the west of the Arakan Yomas the district remained for several years unaltered, but in 1875 the Shwelaung and Pantanaw townships in the extreme east were taken from it, and in 1876 further slight changes were made. In 1891 in order to relieve the Deputy Commissioner, Bassein, and Subdivisional Officer, Ngathainggyaung, and to provide for more efficient supervision the township of Lemyethna, comprising an area of 564 square miles, was transferred from the Ngathainggyaung

subdivision of the Bassein district to the Henzada subdivision of the Henzada district. The district was still very large in area, and in 1893 the Thigwin and Myaungmya townships were taken from Bassein and transferred to the new Thôngwa (Myaungmya) district. Since 1893 the district boundaries have undergone only slight alterations by the transfer of a few *kwins* to or from the district.

Early administration. In the first year of the British occupation a Deputy Commissioner was placed in charge with one assistant and eleven *gaungchok* who replaced the *baingin* and *myothugyis* of the Burmese time but with considerably less authority. They had two peons each by way of police for the whole district. Up till the middle of 1853 the country was in a very disturbed state and the civil officers, aided only by the new troops that could occasionally be spared from the weak garrison in Bassein and by seamen from the "Zenobia" and the "Nemesis," were continually engaged in hunting down and dispersing large gangs of armed marauders. The necessity for strengthening the civil administration was soon felt: the Deputy Commissioner was empowered to punish with death all persons convicted of participation in open and armed insurrection (an authority subsequently withdrawn when quiet was restored) and a police force was raised of a total strength of 546 men— with two European non-commissioned officers—the large majority of whom were recruited from those who had been employed in a somewhat similar capacity under the Burmese rule and had in many cases acted with the gangs only just dispersed. Amongst others who volunteered and were accepted was a man who had acted as a petty chief under the rebel Myat Tun up to the final dispersion of his band, who brought eighty men with him. With occasional changes in the civil establishments the administration remained the same until 1861, when the police battalion was disbanded on the formation of a regular police force for the province under an Inspector-General and District Superintendents. The main structure of the administration was thus fixed and the internal arrangement of the district was gradually developed.

1880. In 1880 the district which still formed one of the five districts in the Pegu Division was administered by a Deputy Commissioner, two Assistant Commissioners, one stationed at Bassein, one at Ngathainggyaung, and eight officers who were styled extra Assistant Commissioners and were in charge of the eight townships, Lemyethna, Yegyi and Sabeyon, Thabaung, Bassein, Ngaputaw,

Thigwin and Myaungmya. There were also a Superintendent of Police, a Civil Surgeon, a Collector of Customs, a Master-Attendant, and a Deputy Inspector of Schools.

When the Irrawaddy Division was formed in 1880 Henzada was at first the headquarters of the Commissioner: it was soon recognized that Bassein was the more important town and the headquarters were removed to Bassein.

District officer. The head of the district is the Deputy Commissioner, who, since the transfer of the headquarters to Dalhousie in 1856 proved unsuccessful, has always resided in Bassein. For administrative purposes the district was as noted above formerly divided into the Ngathainggyaung and Bassein subdivisions. This proved too unwieldy and the Myaungmya subdivision was constituted in 1880 of the Myaungmya, Thigwin and Ngaputaw townships. On the formation of the Myaungmya district, Bassein district was finally divided into two subdivisions, Bassein and Ngathainggyaung. In 1913 the headquarters of the Ngathainggyaung subdivision were moved to Kyônpyaw. The Bassein subdivision now comprises the Thabaung, Bassein and Ngaputaw townships, and the Kyônpyaw subdivision, the Ngathainggyaung, Kyônpyaw and Kyaunggon townships. Each of the townships is in charge of a myoôk or township officer. Each of the townships is also divided up into circles and village-tracts for general and revenue administration.

Village-tracts. For many years the land revenue and other district taxes were collected by *taik* or Circle *thugyis* who were in charge of large groups of villages and were often powerful and influential men. These circle appointments have however within the last twenty years been abolished as they fell vacant from death, retirement or other causes and now there are only eight *taikthugyis* left in the district. The village-tract is now the unit of administration and consists either of a single village or a group of villages so situated that each can be personally supervised by a single headman. All headmen are appointed by the Deputy Commissioner and as such have certain limited magisterial powers In 1913 there were 722 headmen in the district. Capable headmen are entrusted with special criminal powers granted under the Village Act and in 1912-13, 75 possessed these powers; under the Village Act too 125 headmen had been empowered to try civil suits of a petty nature. Village headmen are remunerated by a commission on all revenue collected by them, but it has been found that this commission is in many cases insufficient to

recompense the headmen for his trouble and uphold his dignity. Accordingly land known as *thugyisa* that is, land assigned as an appanage of the office of *thugyi* or headmen, has been granted in certain cases. The *thugyi* pays the revenue and can let the land or work it himself but has no right of sale or mortgage and acquires no heritable interest in it. By 1913-14 seventy-two acres had been thus granted to three headmen.

General Adminis-tration. The district is administered by a Deputy Commissioner invested with general, revenue, and judicial powers, assisted by two subdivisional officers and six township officers, all invested with similar, but inferior, powers. There is also

Civil Justice. a District Judge who is in charge of the department of Civil Justice; to him the Subdivisional and Township officers, in so far as they exercise civil judicial powers, and Subdivisional and Township Judges are subordinate. There were at first four grades of Courts: the first grade were presided over by third grade Extra Assistant Commissioners or Burmese Myoôks who had jurisdiction up to Rs. 500: second grade Courts had jurisdiction up to Rs 3,000 and were presided over by second grade Extra Assistant Commissioners entitled *Sitke* in Burmese: third grade Courts were in charge of first grade Extra Assistant Commissioners or Assistant Commissioners and had jurisdiction up to Rs. 5,000. The Deputy Commissioner was in charge of the fourth grade Court dealing with cases of over Rs. 5,000 value. The Commissioner was a Court of appeal only. In 1864 the Deputy Commissioner had only one original civil case which was disposed of in a single day. The district at that time was of great area and the suits varied greatly in 1865 the value for original suits amounted to Rs. 1,22,885, in 1886 to Rs. 2,36,044. Though in 1869, 3,136 cases came before the Courts, they were mainly of small value, 1,550 being under Rs. 500, 705 between Rs. 500 and Rs. 3,000 and 878 between Rs. 3,000 and Rs. 5,000. The large number of the actions technically called "actions on torts" which were "for damages" was attributed to the facility with which Lower Courts entertained suits for slander; in 1877 out of 3,989 suits no less than 938 were "for damages." In the eighties there was a considerable falling off in cases especially in 1885 and the value of suits continued to be small: thus in 1888 out of 3,871 cases 2,337 were suits valued at Rs. 50 or less. In 1892-93 paddy rings were formed and the price of paddy fell very low: the fall in suits from 2,721 in 1894 to 2,238 in 1895 and in value from Rs. 3,08,121 in 1894 to Rs. 2,10,383 in 1895 was said to be due to the

disastrous effects of the paddy rings. In spite of increasing work little had been done to relieve district officials of the burden of civil litigation. However in 1895 a new Civil Appellate Court presided over by an Assistant Commissioner relieved the Deputy Commissioner of his appellate work as District Judge. He was technically Headquarters Assistant and Additional Judge of the District Court and came in time to relieve the Deputy Commissioner of practically the whole of his civil judicial duties. The present system of Township, Subdivisional, and District Courts was set up by the Lower Burma Courts Act in 1900, but Township and Subdivisional officers continued to be judges as well. In 1902 the Bassein and Kangyidaung townships were amalgamated and a separate judge was appointed for the Bassein Township Court, while a new Township Court for the *Yegyi* and *Kyônpyaw* townships was opened at *Yegyi*. In 1903 the civil subdivision of Bassein was abolished and the work transferred to the District Court, but it was reconstituted in 1906 and placed in charge of a separate whole-time Judge. In 1906 also new township judges were appointed, one for the Township Court of Kyônpyaw, the other for the Township Court of Kyaunggon The Headquarters Assistant who acted as Additional. District Judge was in 1905 replaced by a District Judge who is the Judge of the Bassein and Henzada districts. Finally in 1914 a Subdivisional Judge was appointed for the Kyônpyaw Subdivision to relieve the Subdivisional officer of civil judicial work.

The figures given in table XIX of Volume B cannot for the District and Subdivisional Judges be compared with the latest returns owing to the changes between 1902 and 1906. The figures for cases instituted in Township Courts show remarkable variations: 2,602 suits of an average value of Rs. 80 were instituted in 1901, the figures rose steadily to 3,238 in 1906; since then there has been a decline, only 1898 cases (excluding those from Small Cause Courts) of an average value of Rs. 114 coming before the Courts in 1913. One of the causes of this decrease is said to be due to a larger number of petty suits being tried by empowered village headmen, but probably the real cause was that high prices ruled for paddy in 1911 and 1912 and that cultivators were able to pay their debts without being forced into Court. The District Court showed a remarkable increase from 17 cases with a value of Rs. 1,69,700 in 1911 to 39 cases with a value of Rs. 3,24,667 in 1912, but the number fell to 25 with a value of Rs. 1,67,175 in 1913: Subdivisional Courts

showed a rise from 121 cases with a value of Rs. 1,27,130 in 1912 to 225 cases with a value of Rs. 2,33,110 in 1913, the number in the Kyônpyaw subdivision rising from 40 to 95, of which more than half were mortgage suits. In the latter case the rise in the value of land due to the high prices for paddy prevailing in 1911 and 1912 probably affected suits for redemption of mortgages which are referred to in Chapter IV as being a source of continual dispute.

The Bar. The increase of litigation has on the whole been steady for many years and a bar of considerable size has developed along with it. In the early days advocates appear to have been few, but it is interesting to note that as far back as 1881 a Christian Karen, Maung Edwin, who had taken the degrees of LL. B. and M. A. in the United States and had been admitted to practice in the Federal and State Courts, was admitted as a second grade advocate for the Bassein district. Now there are no less than thirty-seven lawyers in the district. Five barristers-at-law, of whom three are Burmese, one first grade, four second grade, and nine third grade pleaders live in Bassein and find employment mainly in Bassein town. Outside Bassein each township headquarters has from two to five third grade pleaders almost all the third grade pleaders who number twenty-seven are Burmese.

Registration. The demand for money attracted Chetties in the early seventies and the increase of registered documents from 76 in 1874 to 362 in 1875 was ascribed to "an influx of money lending Madrasies." The clever Burman money-lender soon realized the advantages of registration in dealing with ignorant people. The Settlement Officer in 1883 wrote: "It is to be regretted that the Registration Act should have been extended to the interior of districts where the population is exceedingly ignorant. The effects of the Acts would appear to be to enable unscrupulous men to enforce fraudulent contracts against their more ignorant neighbours." The Deputy Commissioner in 1884 wrote with regard to Karens: "Registration has hitherto served almost exclusively as a handy instrument for unscrupulous money-lenders, whose victims regard the ceremonial as altogether depriving them of any right of self-defence." The Burman belief in the inalienability of land from the family led to great confusion as to mortgages and sales and it was found, even in 1914, that mortgages were sometimes registered as sales. The jungle Burman, however, for his own part takes little more care to-day to make the terms of transactions in land clear and indisputable than he did twenty-five years ago when it was noticed that nearly all the litigation about land arose

from carelessness in providing no documentary evidence. In 1912-14 the Settlement Officer found that of 3,292 sales only 1,650 and of 2,705 mortgages only 1,478 were registered and remarked: "The statistics indicate that the provisions of the Registration Act are not fully complied with at present, though this does not apply to the dealings of non-agriculturists who are very careful to guard themselves. Registration is most common in the richer tracts near township headquarters, but in remoter areas like the West Coast and along the foot hills of the Yomas non-registration is almost the rule." The Deputy Commissioner is the Registrar and associated with him are the Treasury Officer as Joint Registrar and a pensioned clerk who acts as a Sub-Registrar in Bassein In Ngathainggyaung, Kyônpyaw and Kyaunggon the Township Officers and Township Judges are Sub-Registrars, but the registration work is carried on mainly by Sub-Registrars appointed for each of these townships by the Financial Commissioner. The appointment of Sub-Registrar is much sought after by retired Government servants who draw fees up to fifty rupees a month. In Ngaputaw and Thabaung the Township Officers are the Sub-Registrars. The following table shows the number of registrations in the district in 1903-04 and 1913-14.

Year.	Registrations affecting	
	Immovable property.	Movable property.
1903-04	1,343	240
1913-14	4,008	662

The powers conferred on the Deputy Commissioner in the early days of the British occupation have been noted above. The district gradually settled down and in 1866 Criminal Justice was administered by the Deputy Commissioner, an Assistant Commissioner, an Extra Assistant Commissioner, an Honorary Magistrate, a *Sitkè* and eight Myoôks. The total number of cases was 1,568: only four persons were committed to Sessions, and of the 1,883 persons convicted in the District Courts only 12 were sentenced to more than four years' rigorous imprisonment, while 1,548 were fined Rs. 50 **Criminal Justice.**

or less. In 1875 changes were made on the criminal side similar to those effected on the civil side. Crime became so bad in 1886 that the Deputy Commissioner and Assistant Commissioner, Bassein, were empowered under the Lower Burma Gaols Delivery Act with the powers of Sessions Judges for trying certain classes of cases. In 1894 the Deputy Commissioner and his Subdivisional and Township Officers exercised magisterial powers in their respective charges. The increasing volume of work, however, has necessitated Additional Magistrates and the District Magistrate was relieved in 1905 of some criminal work by the appointment of a Headquarters Assistant invested with special powers. In 1911 congestion of criminal work had become so great that an Additional Magistrate was appointed for a year and a Magistrate specially empowered under section 30, Criminal Procedure Code, for three months. At present the District Magistrate tries only criminal cases of a special nature and his main criminal work consists of revision of the cases of Subordinate Magistrates. The District Judge fills the post of Senior Magistrate and an Extra Assistant Commissioner, invested with special powers under section 30, Criminal Procedure Code, devotes his whole time to criminal work. There are also two Subdivisional Magistrates with first class powers, a Headquarters Magistrates with first class powers, six first class and two third class Additional Magistrates, four second class and two third class Township Magistrates. There are also Honorary Magistrates, three first and six third class at Bassein, four at Ngathainggyaung, and four at Kyônpyaw.

The district belongs to the Bassein Sessions Division: the Session Judge resides at Bassein but holds Sessions also at Henzada.

Honorary Magistrates.

So far back as 1866 a Mr. Halliday was appointed a Justice of the Peace in the town of Bassein. He appears to have disposed of European cases and gave considerable help to the local magistrates. Honorary Magistrates were appointed for Bassein in 1880-81 and in 1886 tried 690 cases mostly of assault and abuse. They relieved the ordinary magistrates of a vast amount of work of a petty nature and the institution proved so successful that three of the Bassein Honorary Magistrates have been given first class powers while Honorary Magistrates were also appointed for Kyônpyaw and Ngathainggyaung in 1910. Altogether 885 cases were tried by Honorary Magistrates in 1913.

Crime.

The district was so large up to the year 1893 that it is difficult to compare the figures for crime with those of later

years. In 1886 there were only four dacoities, but thefts of cattle worth between 6,000 and 7,000 rupees were reported. In 1874-75 there was not a single dacoity in the district, but that immunity was not enjoyed for long. Grievous hurt cases alone increased from 11 to 152 in 1882-83. It was, however, in the troublous times connected with the annexation of Upper Burma that Bassein became known as one of the most criminal districts in Burma and in the Criminal Justice Report for 1886 it is remarked that four rebellion cases and 329 dacoities were reported during the year. In the spring of 1886 it was found that the ordinary procedure for the disposal of the cases of insurgents and dacoits who had been captured in the winter of 1885-86 was inadequate, and under the Lower Burma Gaols Delivery Act, which was passed in July 1886 and expired in June 1887, the Deputy Commissioner and Assistant Commissioner, Bassein, and the Assistant Commissioner, Ngathainggyaung, tried 576 persons of whom 71 were sentenced to transportation for life. In 1887 the number of true dacoity cases reported was 243, but this fell to 87 in 1888, 70 in 1889 and 32 in 1890. In 1894 when the district was reduced to its present area the total number of offences reported was 4,161, but 1,328 of these were under special or local laws; cattle thefts numbered 202 and this has remained one of the commonest forms of crime, no less than 279 cases being reported in 1913. Bassein has now obtained an unpleasant eminence in crime and from being second to Tharrawaddy in 1910 and 1911 in the number of offences reported as true has now surpassed that district. Grievous hurt cases have averaged 138 over the last five years, and murder 21, while robbery and dacoity cases were 28 and 14 respectively. Some of the worst murders have been committed with clasp knives which are used as daggers and the Deputy Commissioner in his Criminal Justice Report for 1913 says: "It is becoming the habit of burglars, cattle thieves, and other dangerous criminals to carry clasp-knives and to use them if any attempt is made to arrest them." Under special and local laws the commonest offences are those against the Excise Acts which numbered 407 in 1913.

Police. The arrangements for policing the district up to 1861 have been noted at the beginning of the chapter. In that year a regular police force was constituted and a Superintendent and Inspector appointed. There were also five head constables, 16 sergeants, 178 constables, and 56 boatmen. *Kyedangyis* who were exempted from capitation-tax were also appointed in hamlets when necessary, and

they were bound to report all crimes occurring within the hamlet to the *yazawut gaung*, "a paid village or parish constable who has under him an average area of 80 square miles and works in close communication with each adjoining police post." In 1886 it was anticipated that there would be trouble in connection with the taking of Upper Burma and detachments of troops belonging to the 16th Bengal Infantry and afterwards to the 7th Madras Infantry were sent to the district; one European and two native officers with 95 men were stationed at Bassein, and one native officer with 37 men at Nathainggyaung. Both the judiciary and the police were swamped by the extra crime and in addition to the military forces a Karen levy and Karen water militia whose services are noted in Chapter II were enrolled. The Karen levies were disbanded in 1887, while the special Indian police who had been recruited in 1886 in 1887 became military police under the Military Police Act which provided a stricter discipline for men subject to it than the Act of 1861.

The main object of the District Cesses and Rural Police Act, Act II of 1880, had been to provide funds for the support of the rural police. In 1890-91 however in accordance with the scheme for reorganizing the Lower Burma Police *yazawut gaungs* and *kyedanygis* were abolished or transformed when suitable into village headmen or rural policemen, who were as a rule ten house-gaungs and received no pay. About the same time the beat patrol system was instituted and for the training of constables a police training school was started in Bassein. The district police force which in 1904 consisted of 335 officers and men had in 1913 been increased to a total of 578 though the sanctioned strength was 668. There are also 199 military police who belong to the Toungoo Battalion and are for purposes of administration and discipline under the District Superintendent of Police, though there is an Assistant Adjutant of the Toungoo Battalion stationed at Bassein for purposes of inspection only. The military police are employed mainly in guard and escort duty.

The whole force is distributed over eighteen police-stations and three police outposts including the outpost at Diamond Island. The military police are all natives of India, but the civil police excluding the officers of and above the rank of Inspector consisted in 1913 of 413 Burmans, 157 Indians.

That Bassein enjoys an unenviable position in the list of

criminal districts has been noted under the heading Crime. For this it is probable that the police are at any rate to a certain extent responsible: the Criminal Justice Administration Report for Bassein district for 1913 recognizes this in the following words:

"The efficiency of the police force can hardly be expected to increase unless the pay of constables is raised in proportion to the increase in the cost of living and wages in other employments, and as regards its subordinate officers the force is passing through a period of transition, which, whatever may be the ultimate results, must impair its efficiency for the time being."

Jails. The jail of the district was at first a mat building: in 1858 a wall round it was commenced which was not completed until 1861: in 1863-64 a new ward and a new hospital were constructed and during the following year a new jail was commenced. It was in this year that an Inspector-General was first appointed and a more effective and regular system of prison management begun. The new jail which cost Rs. 1,72,600 was not completed till 1868 up to which period the buildings used were temporary structures raised on piles with wooden floors. The new jail had four wards radiating from the main guard in the centre, and the whole was surrounded with a high wall: the buildings were brick work structures with iron roofs and earthern floors, the prisoners sleeping on benches, two feet off the ground. Accommodation at thirty-six superficial feet per head was provided for 405 males and 16 females. In 1855 the average number in confinement was 317. In 1876 the average number of prisoners was 365 males and four females and the net cost of each convict to the state in 1876 was estimated at Rs. 67-8. By 1879 accommodation had been provided for 465 prisoners. A cholera epidemic in which 63 prisoners were attacked was the only instance of a severe epidemic in the jail, but the years 1886 and 1887 were notable for the attempts made by prisoners under trial for rebellion or dacoity to over-power the warders. The 1886 attempt was quelled by the presence of mind of the Superintendent of the Jail, Dr. Dantra, and his Jailor, Mr. Harrison; three of the prisoners were shot dead and one mortally wounded. The 1887 attempt was equally abortive owing to the courage of Mr. Harrison and resulted in the death of four of the prisoners. Extensions at the jail were completed in 1887 and accommodation more than doubled: the average number of prisoners increased from 591 in 1886 to 757 in 1887. Work-sheds were constructed in 1890 and further extensions were

carried out in 1893: by 1896 the average daily number of prisoners was 1,347. Considerable improvements to buildings were again carried out in 1900 and though the number of prisoners fell to an average of 752 in 1902 the number rose to 1,051 in 1903 and has remained at about that figure, being 1,238 for 1913. The jail is one of the most economical in Burma, the average cost per head in 1903 being Rs. 53-2 and the net cost Rs. 27-13, while in 1912 the net cost was Rs. 34-3 the lowest figure in the province. This result is due to the steady and profitable employment of prisoners, nearly half of whom are employed on making dunnage mats for rice carrying steamers: nearly a lakh of these mats are sold every year. The jail has also some fifty acres of paddy land which produces about two thousand baskets of paddy, while a considerable quantity of garden produce is grown for sale.

Surveys. The earliest survey of the district was a topographical reconnaissance survey made by Captain Fitzroy in 1860-62 and his maps are still reliable and useful. During the years 1877 to 1880 a trigonometrical survey party continued the Assam Longitudinal series over the Bassein district from the triangle formed by the stations of Kanyindaung and Kungyaung in Henzada and Kondon in Bassein district. This party which worked southwards to the Alguada Rocks fixed thirty-four major stations forming the main triangles of the series, and from these fifty-five minor stations, mostly conspicuous peaks of the Arakan Yomas, were connected by intersection.

Cadastral survey. Up to 1879 there was no detailed cadastral survey nor were there any maps to guide the revenue administration. Between 1879 and 1881, however, in advance of and as a basis for settlement operations a Survey of India party surveyed the revenue circles near Bassein town and Mobya with a combined area of 526 square miles. The operations were continued up to 1884 by which time the cadastral survey was completed in the north. The Ngaputaw township, however, an area of about 500 square miles, was not surveyed till 1889-90 when the work was carried out by a local field-to-field party.

Supplementary survey. Supplementary survey was gradually taken up as settlement operations were completed and rates fixed by Government, and has been carried on by local surveyors who have undergone training generally in the Government Survey School—though in earlier years surveying was taught in other schools—and are appointed as subordinates in the Land Record Office. This is controlled by the Superintend-

ent of Land Records who is in charge of the entire supplementary survey operations under the immediate control of the Deputy Commissioner.

Public Works Department.

The district is combined with that of Henzada to form a division of the Pegu circle and is in the charge of an Executive Engineer who has his headquarters at Bassein. The formation of the division has varied a good deal since 1880, when, on a redistribution of charges, Bassein was made the headquarters of a division, but except for about three years the headquarters has been at Bassein. There are Subdivisional Officers at Bassein and Ngathainggyaung. The Ngawun embankment is under the charge of the Executive Engineer, Henzada Embankment Division. There are no works of any importance besides the usual public buildings, roads, and the Ngawun embankment. Communitions by water are exceptionally good and the railway serves a large area: thus the activities of the department are confined to the improvement and repair of its roads, maintenance of court houses, police buildings, official residences, and bungalows Little building of importance has been done of recent years.

District Cess Fund.

The department has also had the control of certain public works which are paid for by the District Cess Fund. Up to 1910 the amount spent on civil works in charge of Public Works officers was only about Rs. 25,000 per annum. It was however decided after proposals had been submitted for a separate Engineering staff for District Cess Fund works that all District and District Cess Fund works should be handed over to the Public Works Department. This fund which was levied under the District Cesses and Rural Police Act, II of 1880, was at first intended to provide for the rural police and other local requirements and now derives its income mainly from the cess of ten per cent. on land revenue, from the leases of ferries, slaughter-house licenses, cattle pound fees, and fines and bazaar rents. Expenditure on police was stopped from 1890 and the fund came to be expended on the maintenance of minor roads, of bungalows, and also in medical and sanitary services and education. Up to 1904-05 also the fund paid for certain district post charges. The fund amounted in 1901-02 to Rs 1,51,750 of which Rs. 1 30,532 was Cess, and Rs. 11,035 Bazaar rents, and under Expenditure Education accounted for Rs 24,468 and Civil Works Rs 54,041. By 1910-11 Cess had increased to Rs. 1,53,400, but Bazaar rents had decreased, owing to a Town Fund being instituted in Kyônpyaw in 1907, to Rs. 7, 839. Expenditure had mean-

while not increased: only Rs. 1,32,416 was spent in 1910-11, the main items of expenditure being Education Rs. 32,958, Medical Rs. 27,009, of which nearly half was on account of bubonic plague, Civil works Rs. 48,611. Civil Works had become a very important item of expenditure, the average of the ten years 1901-02 to 1910-1911 being over Rs. 60,000. The Fund had by 1910-11 accumulated a closing balance of over two lakhs of rupees. For 1912-13 the total revenue was Rs. 1,83,035 and the total expenditure Rs. 1,58,097, Education accounting for Rs. 39,936, Medical charges Rs. 17,717 and Civil Works for over Rs. 70,000.

The Cess Fund is thus an important feature in District Administration. It provides the main support of vernacular education, and maintains one Sub-Assistant Surgeon and staff, contributes Rs.5,500 as grants-in-aid to Municipal hospitals and dispensaries, maintains one Native Superintendent and seven vaccinators, six Veterinary Assistants, and up to 1911 also provided twenty bungalows for the use of travellers, 15 of these were taken over by the Public Works Department in 1911, but the cost of their upkeep is not met from Provincial Funds.

The Port. The port of Bassein, one of the best natural ports in India, includes about thirteen miles in length of the river with excellent holding ground and a foreshore alongside of which large vessels can lie at all states of the tide for landing and discharging. Erosion occurs in places, but a good deal has been done to counteract this by the erection of a revetment wall along part of the foreshore and by depositing stone ballast along another part of the river face. In 1861 the port establishment consisted of a master attendant, or harbour master and pilots. There were several buoy vessels and boats under the orders of the Harbour Master. All vessels paid dues at the rate of four annas a ton. The Port Fund which was made up of these dues amounted in 1861 to Rs. 7,393, but the expenditure was Rs. 12,555. By 1880 the trade of the port was so extensive that there were seven European and two Native pilots and the average earnings of the European pilots were put down at £450 a year, the rates charged for full pilotage being from Rs. 59-8 up to Rs. 520 for sailing vessels from seven to twenty-six feet draught. On the amalgamation of the various Marine establishments into the Indian Marine in 1877 the title of Port Officer was substituted for that of Master Attendant, and the appointment was henceforth reserved for selected officers of the Royal Indian Marine. At present the 'Port Officer' is also Collector of Customs

and Surveyor under the Merchant Shipping and Inland Steam-vessels Acts, Bassein being a port of survey under the latter Act. He has under him a staff of one harbour master and five pilots. The pilots have a lookout station on Diamond Island, where ships touch for orders, and are also in communication with Diamond Island from Bassein by wireless telegraph. The average income of the Port Fund during the last five years up to 1st April 1914 has been Rs. 78,277. This is now derived from Port dues on sea-going steamers and rents paid for jetties by inland traffic; the average expenditure was Rs. 80,561, but this was considerably more than the normal expenditure owing to nearly a lakh of rupees having been spent in 1910 on the construction of jetties. All wooden jetties have been replaced by iron structures and there are now one iron screw pile wharf, five pontoon and three iron jetties belonging to the Port for Inland traffic and one Government pontoon jetty. All the large rice mills have their private jetties for sea-going vessels.

CHAPTER X.

REVENUE ADMINISTRATION.

In Burmese times—British Administration—Land Revenue—Fisheries—Capitation-tax—Miscellaneous land revenue—Income-tax—Collection of revenue by headmen—Stamps—Salt—Customs—Excise—Opium—Cocaine.

In Burmese times. The revenue derived from Bassein district prior to the annexation is not accurately ascertainable. The area differed from that of the district as constituted under the British Government, as it did not include the tract west of the Yomas, while it extended further east into what became the Thôngwa district. Moreover, the methods of the Burmese revenue administration were not such as to conduce to the keeping of accurate records. The amount annually remitted to the capital, or to the Court official to whom the revenues of the district were assigned, is known from local records, and appears to have amounted to Rs. 2,82,500. It was derived from a hous and family tax (*thathameda*), a tax of Rs. 10 per yoke of buffaloes or bullocks, from fisheries and sale dues and transit duties There was no land tax. The amount collected by the local officials, whose sole emoluments consisted of the excess of their exactions over

the sums they were compelled to remit to their superiors, must remain a matter for speculation. If, as assumed in the British Burma Gazetteer of 1879, the share of the local officers amounted to two-thirds of the amount ultimately remitted to headquarters, the total revenue paid by the inhabitants of the district must have amounted to about Rs. 4,70,800.

British Administration: Land revenue.

During the first two years of our occupation of Bassein the Burmese tax on cattle was retained, but in 1854 a land tax was substituted, land measurers having been brought down from Arakan to measure the circles. The rates, which varied from 8 annas to Rs 2 per acre, were assessed on the several circles of each township according to the reports of the *thugyis* as to what the land could pay, and having regard to the distance of the various circles from the principal markets. The unit of assessment being the circle, which might comprise as much as 300 or 400 square miles, and the *thugyis* who formed the basis of the revenue administration being entirely ignorant of what an acre was, the resulting assessment was of a very rough and ready order. The arrangement was similar to that originally adopted after the annexation of Arakan and Tenasserim and long retained there, for it was only in 1847 that the *kwin* had been introduced by Captain Phayre as the unit of assessment in the latter province. The revenue derived from the district in 1855-56 amounted to Rs. 6,17,910, of which the new land tax contributed Rs. 2,15,170, and the capitation tax of Rs. 5 per married men and Rs. 2-8 per bachelor, which had been substituted for the *thathameda* of Burmese times, Rs. 1,94,650. The balance was derived from fisheries, salt, excise, customs, forest produce, fees and fines and other minor sources. The increase was largely due to indirect taxation, which was hardly felt after the direct extortions of the Burmese official, and the immediate result was an increase of population by immigration and an extension of the area under cultivation.

The rough system originally adopted for the assessment of the land tax did not long survive. The pacification of the newly acquired territories having been accomplished and an adequate knowledge of the country and people obtained, more accurate methods were adopted. The *kwin* system of assessment was introduced into the province of Pegu, crops were cut and measured in the different circles and an average gross produce per acre thus obtained for each circle. Assessment was then made by *kwins*, having regard to the proximity or otherwise of the different *kwins*

to the market and other relative advantages or disadvantages. Where all the *kwins* in a circle were comparatively similar in these respects there was thus a uniform rate per acre for the circle, but where the *kwins* were radically dissimilar there were differential rates within the circle. This system was introduced at the settlement of 1862, which was carried out by Colonel McMahon and Captain Munro. The rates assessed varied from Re. 1 to Rs. 2-8 per acre. By 1875-76 the area of land under cultivation when the land tax was instituted had nearly doubled, and the land revenue had risen to Rs. 4,37,320. In 1879 the rates were summarily enhanced by twenty-five per cent. in most of the circles. The settlement of the circles comprised in the north and centre of the modern district, the townships of Bassein, Thigwin (which included much of the modern district, including Kangyidaung township, which still later became part of Bassein township), Thabaung, Kyônpyaw and Yegyi, was revised by Mr J. E. Bridges in the years 1879—84, and that of the Myaungmya township, which then formed part of the district, by Mr. H. M. S. Mathews in 1888-89. These settlements were conducted on modern lines, the area being divided into tracts according to fertility and cost of carriage' the average outturn per acre for each tract being ascertained by crop cuttings, the soil classified accordingly, and rates assessed for the various soil classes in each tract. The rates on paddy land imposed as the result of Mr. Bridges' settlement varied from Rs 3 to annas 12 per acre, and those on miscellaneous cultivation from Rs. 2-8 to Re. 1. Gardens were assessed at Rs. 2-8 per acre. In the Myaungmya township paddy land was assessed at from Rs. 2-4 to Re. 1 per acre, miscellaneous cultivation at Rs 2, and gardens at Rs. 2-8 The surveyed portions of the Ngaputaw township, *i e*., the southern part of the district from Ngaputaw to the sea, were not brought under settlement until 1901-02, when the operations were conducted by Mr. J. Mackenna. The rates imposed on paddy land varied from Rs 3-4 to Re. 1 per acre; garden land was assessed at Rs. 2, *dhani* cultivation at Rs. 4, and miscellaneous cultivation at Rs. 1-8. Prior to this original settlement Mr. Mackenna had in the years 1897—99 revised the settlement effected by Mr. Bridges in 1879—84, the rates imposed being from Rs. 4 to annas 12 on paddy land, from Rs. 10 to Rs. 2-8 on gardens, Rs. 5 on *dhani*, and Rs. 2-8 on miscellaneous cultivation. The settlement of the whole district again came under revision in 1912-13, when Mr. C. F. Duffin conducted operations in Ngaputaw township, while

Mr. Jamieson in that and the following year revised the settlement of the rest of the settled area, and also brought under original settlement the cultivated portions of the area lying to the west of the Yomas. The rates proposed in the area settled by Mr. Duffin were on paddy land from Re. 1 to Rs. 4, on gardens from Rs. 2 to Rs. 3, on *dhani* Rs. 5 and on vegetables from 1-8 to Rs. 2-8. The rates proposed for the area settled by Mr. Jamieson were from annas 12 to Rs. 5 on paddy land, Rs. 1-8 to Rs. 3 on gardens, Rs. 4 on tobacco and Rs. 5 on *dhani*. Mr. Duffin proposed to increase the demand in the area settled by him by a little over one lakh of rupees or twenty-nine per cent., while Mr. Jamieson's proposals involved an increase of twenty-two and a half per cent. The land revenue of the district has shown a steady growth; owing to the change in the district boundaries no comparison can be made before 1893, since when the changes have been unimportant. The figures in 1893-94 were 480,637 acres yielding Rs. 7,21,583 revenue; by 1903-04 the acreage had increased to 642,095 acres yielding Rs. 13,76,942 and in 1913-14 to 699,916 acres yielding Rs. 16,39,851.

Fisheries. Fisheries have always been a very important source of revenue in this district. In Burmese times they yielded Rs. 92,030 out of the total of Rs. 2,82,500 annually remitted from the district, exclusive of the amounts which stuck to the fingers of the officials concerned in the collection. In 1855-56 under British administration the yield from fisheries had fallen to Rs. 81,570. A fishery tax was imposed on all fishing implements, such as nets and traps, and the fisheries were sold annually by auction to the highest bidder. Later the fisheries were leased from year to year to neighbouring villages, the Deputy Commissioner exercising his discretion in selecting the worker from among the always numerous applicants. This system was superseded by a return to auction, the fishery being leased for a term of years to the highest bidder, care, however, being taken that the lessee was a *bonâfide* fisherman residing near the fishery. In 1876-77 the fishery revenue amounted to Rs. 1,08,985. For some years before 1884-85 the "fair rent" or allotment system was again gaining favour, but no records exist to show which fisheries were auctioned, and which given at fair rents. In 1884-85 the Deputy Commissioner allotted them all after first putting them up to auction, consulting *thugyis* and Township Officers, and considering past prices. From these data he fixed his "fair rent." In 1889-90 nearly all were auctioned, as they were again in 1894, when however, many

gambling bids were refused and rents fixed. In 1896-97 all were auctioned. In 1898-99 Captain Maxwell was deputed to make an exhaustive inquiry into the working of the fisheries of the Irrawaddy Division, and his report is still the classic authority on the subject. The present system is the outcome of his report.

Captain Maxwell found that as compared with 1891-92 by 1897-98 there had been—

(1) a decrease of 14 per cent. in the revenue;

(2) an increase of 40 per cent. in the prices of fish and *ngapi*;

(3) an increase of 185 per cent. in the untaxed imports;

(4) an increasing population;

(5) a decreasing amount of salt used in the fisheries.

As a result of this report extensive changes were introduced. Buncing and baling was almost abolished, the fisheries were divided into manageable blocks, the amount of earnest money demanded was reduced, and dates for payment of instalments were readjusted. In 1898-99 under the old system 98 undivided fisheries fetched altogether Rs. 2,09,840; the amount realized in 1910 when the number of separate fisheries rose to 285 was about Rs. 1,425 less. The number of fisheries is now about 335 including 17 turtle banks and the total fishery revenue has grown from Rs. 2,89,641 in 1903-04 to Rs. 3,04,230 in 1913-14 The amount of this derived from net licenses was Rs. 12,557 in 1903 04, but this had decreased to Rs. 6,640 in 1913-14. This was due partly to the fees for *pinle damin*, traps used in sea fishing, being reduced in 1902-03 from Rs. 60 to a nominal fee of Re. 1 which was abolished in 1906 in order to rehabilitate sea fishing, partly to the exemption of *hmyin paik* (shrimp nets), and *bawun* when used in the sea-estuaries, and partly to a decline in net fishing by Indian coolies. In addition to the reduction of the fee advances were made to *pinle damin* fishermen to enable them to work without getting into the hands of money-lenders and losing all their profits. The experiment, however, failed and the loans were recovered with difficulty Owing to the dfficulties experienced by the Township Officers in dealing with the extensive fisheries an *Inkunwun* was appointed in 1905.

The Pearl Fishery from Pyinkayaing Cape to the Thetkethaung creek was abolished in 1909 as there were no oysters and no purchasers. More detailed notes on Fisheries and Turtle Banks are given in Chapter XIV.

The capitation-tax represents the house and family tax

Capitation-tax.

of Burmese times when the total demand was ordered annually by the Governor of the district, the assessment per circle being left to the *Akunwun* and the assessment per house to the *thugyi*, the latter fixing it according to his estimate of the riches of the head of the house, in some cases counting several families as one "Revenue House." After the annexation the uniform rate of five rupees for a married man and two rupees eight annas for a bachelor was fixed. In 1855-56 the yield of the tax was Rs. 1,94,650. As the population grew the revenue from the capitation-tax steadily rose: in 1894-95 the number of assessees had reached 61,499 and the total amount collected was Rs. 2,83,63. This amount included Rs. 14,909 land rate in lieu of capitation-tax, a peculiar rate which dates back to the early days of occupation and which is now levied in only about eight of the larger towns in the province. The rate was 6-12 per 1,000 square feet on all lands covered by buildings and Rs. 3 per acre on land not so covered. Increasing population and stricter assessment has brought the number of assessees to 92,859 and the yield up to Rs. 4,26,501 including Rs. 19,652 land rate in 1913-14.

Miscellaneous and revenue.

A considerable item of miscellaneous revenue is from fines imposed under the Village Act chiefly by village headmen. The average for the nine years ending 1913-14 was Rs. 7,328. Fees for surveying pottas formerly brought in about Rs. 2,000 a year, but, since 1909-10, the receipts have fallen owing to pottas being no longer issued, and in 1913-14 only Rs. 10 were collected in fees. Mines and minerals are unimportant and under this head the average for five years is Rs. 1,395. Other miscellaneous land revenue is made up of rents from leased town lands and minor items, and has grown from Rs. 7,601 in 1909-10, to Rs. 13,636 in 1913-14.

Income-tax.

Income-tax was extended to Bassein town in 1889. The yield of the tax has been comparatively small as a good many of the larger incomes are derived from agricultural land and are therefore wholly or partly exempt, while the wealthy firms pay the taxes on their profits mainly at Rangoon so that these receipts do not appear in the district figures. Of recent years the collections show on the whole a steady increase. In 1903-04 the collection was Rs. 19,651, but in 1904 the act was extended to the whole district and in 1913-14 the yield had increased to Rs. 46,631 assessed on 1,005 persons; 366 of these had incomes of under Rs. 1,260 and only 18 had incomes of over Rs. 10,000 per annum.

Reference has already been made in Chapter IX to the village-tract as the unit for general administration. There were 26 circle *thugyis* in the district in 1894-95 but now only 8 are left. Their place has been taken by the headmen of the village-tracts. The circle *thugyis* in their circles and the village headmen in their tracts are responsible for the collection of land revenue and capitation-tax and in return for their duties they are paid a commission on all revenue collected by them. Collection of revenue by headmen

In 1894-95 the 26 Circle *thugyis* drew an average of Rs. 1,319 each or in all Rs. 34,302, the net amount left after Rs. 20,221 had been deducted for *thugyisayes* and Rs. 6,932 for chainmen. In 1913-14 the 8 circle *thugyis* now left drew Rs. 11,314, while 645 revenue collecting headmen drew Rs. 80,441 or an average of Rs 125 each. Reference has been made in Chapter IX to the scheme for improving the remuneration of village-headmen by grants of *thugyisa* land.

Stamps. The stamp revenue is in general a good indication of the trade and business activity of a district. The returns are liable to great fluctuations but over long periods increased work in the Courts and increased business means an increase in stamp revenue also. In 1903-04 Rs. 91,349 were realized and in 1913-14 Rs. 1,21,738. Judicial stamps which in the three years 1906 to 1908 averaged Rs. 86,315, figures which correspond with the great volume of civil litigation dealt with in those years, realized Rs. 65,703 in 1903-04 and Rs. 73,225 in 1913-14, on the other hand non-judicial stamps which reflect more accurately business activity increased steadily from Rs. 24,351 in 1903-04 to Rs. 48,009 in 1913-14.

Salt. The earliest tax on salt was in 1854 an excise of four annas per earthen pot but manufacture was otherwise free. Salt exported across the frontier, however, paid Re. 1 per 100 viss. In 1862 a duty of 8 annas per earthen pot of over 6 gallons and Rs. 5 for each iron cauldron was levied in the Bassein district. Licenses were issued in 1876, but the rates were not raised till 1888 when the enhancement of salt duty in Lower Burma from three annas to one rupee per maund rendered revision necessary. The enhanced rates were still found to be too low as local salt manufacturers could undersell imported salt: the rates were therefore again raised in 1889 and further enhancements took place in 1895, 1898 and 1901, while the manufacture was restricted to four *kwins* in the Ngaputaw township. Though efforts were being made to suppress the salt industry the imports of salted fish into Burma increased

greatly and it was at one time seriously proposed that fish curing yards at which salt might be supplied at special rates should be established. The system of direct taxation on the output was introduced in the district from 1st January 1903 at a rate of Rs. 3-2 per 100 viss: the Bassein salt boilers were, however, unwilling to take out licenses under the new scheme and the duty was reduced to 8 annas per maund. The licensee had to provide a storage godown as an adjunct to the boiling shed: the partition wall contained a grating through which all salt was thrown as it was removed from the cauldrons. The godown had only one door of which the Salt Inspector kept the key. He visited each factory at least every alternate day and weighed and removed part of the salt to a storage compartment. For Bassein there was one Salt Inspector, one Assistant Inspector and four peons, and the factories were also visited by the Township Officer once a month. It was found that the system was impracticable as there was no certainty that the licensee would put all the salt through the grating, and there were numberless opportunities for fraud and oppression.

The average capacity per cauldron rose from 43 gallons in 1907 to 63 gallons in 1909, and besides the Salt Inspector 8 Indian Civil Police were also posted for special duty at the salt fields.

From 1st January 1911 the rate of duty was raised from 8 to 10 annas per maund and the licensees were required to pay the duty at Government treasuries instead of to Inspectors as before, while the Police were no longer used. The salt establishment, however, was strengthened from 1st June 1912 and was put under the Superintendent of Excise instead of the Township Officer. The Salt Revenue which in 1896 was Rs. 28,000 rose to Rs. 61,750 in 1903 and in 1913 to Rs. 78,555.

[Cu]stoms. In the early years of the Port the Master Attendant was the Collector of Customs and the rates were in the main similar to those levied at Calcutta. In 1855-56 the duties realized were Rs. 13,560. By Act XVII of 1867 the export duty on rice was raised from two to three annas a maund and as Bassein developed a great rice export trade the Customs Revenue increased. Imports have decreased steadily as supplies are derived from Rangoon, so that practically the whole of the Customs duty is derived from the export duty on rice. Customs duties amounted to Rs. 8,99,753 in 1904-05 and had increased to Rs. 15,17,115 in 1913-14, the record year being 1912-13 with Rs. 17,92,663.

These duties are borne by the shippers and are as a rule paid at Rangoon for convenience.

Excise.

Under the Burmese rule the use of intoxicating liquors and drugs was nominally prohibited. It was however realized after the annexation that as they were undoubtedly used their use should be turned to the benefit of the State. The excise revenue which did not include that derived as Customs duty amounted in 1855-56 to Rs. 55,390. In the early days the system of "farming" the excise leases was in force; by this the monopoly to sell drugs or spirits in large tracts of country was given to one person or company under certain restrictions. In 1872 this was abolished, and replaced by the system of "fixed duty" and "monthly tax on outstills." A distillery and quarters for an Excise officer were constructed in Bassein. Outstills however flourished and in 1876-77 it was noted that the revenue from country spirits was derived almost entirely from outstills which had been permitted to grow to a very large extent. The central distillery at Bassein was a failure; in 1886 the rent and license fees realized only Rs. 560 and it was closed in 1887. A depôt for issue of distillery liquor was again established in 1893 but was closed the next year. Outstill licenses are now being gradually restricted and the contract distillery system was introduced into Bassein Town in 1912 and was extended to Bassein township in 1913: six additional shops were opened for the sale of country spirit in some of the more important centres and this involved the withdrawal of six licenses for the sale of country fermented liquors. This change has taken place in consequence of the great increase in the drink habit and the difficulty of coping with illicit distillation, which has been especially rife in Bassein town and neighbourhood. Not only is the illicit product cheaper but it is stronger than the country spirit supplied by Government and the average Burman thinks that he gets better value by drinking country beer, or *hlawzaye*. *Tari* is no longer drunk so extensively as it was. A considerable amount of crime is said to be due to drink, and in 1912-13 fifty offences were reported in which intoxicating liquor, mainly *hlawzaye* had been the cause of or contributory to crime. Among the most noticeable features of late years is the decided increase in the taste for English beer among Burmans. The total revenue in 1903-04 was Rs. 1,14,539; it has shown remarkable variations increasing to Rs. 2,05,173 in 1905-06 and falling to Rs. 1,46,743 in 1907-08; it rose to Rs. 2,31,547 in 1913-14.

Opium. The use and methods of sale of opium in early days present no features of special interest. Bassein shared in the great reduction of opium shops which was made in 1881-82 "not only to mitigate what was considered a blot on the Revenue Administration of the province but also to meet the heartfelt wish of the people that repressive measures should be taken to restrict the use of opium among the rising generation." In pursuance of the general policy in Lower Burma the new Opium Regulations of 1894 forbade as a rule the possession of opium to Burmans, but those who were over 25 years of age and registered themselves between February 1892 and June 1894 as habitual consumers were allowed to purchase the drug. This system proved ineffectual owing to defective registration and other causes, there was continual smuggling, and the number of consumers steadily increased. In order to provide more effective checks, from April 1902 the disposal of retail licenses by auction was abandoned in favour of a system of appointment of vendors by selection. The list of registered Burman consumers was also opened for a time, but the use of the drug among the unregistered and young Burmans does not seem to have been much affected, for the Deputy Commissioner in his report for 1911-12 remarked that "the figures of Burman opium consumers serving sentences in jail on 26th April 1912 are 5 registered, 112 unregistered consumers." Considerable attention has, however, been paid to cutting down opium allowances in order to prevent hawking: Chinamen are now restricted to a maximum of three-quarters, Burmese to one-quarter, and Indians to one-eighth of a tola per day, and the normal allowance is much below the maximum. In 1913-14 there were seven opium shops in the district, and the average monthly number of consumers was 3,356, of whom 1,435 were Chinamen, 899 Burmans, and 1,022 Indians. Burmans consumed more than three times as much opium as Indians, and Chinamen nearly three times as much as Burmans. The opium revenue reached its highest point in 1904-05 when it yielded Rs. 5,13,457; in consequence of restrictive measures it fell to Rs. 2,62,829 in 1911-12 but rose to Rs. 3,26,166 in 1913-14.

As regards the use of opium it is held that in the Bassein district "the habit is permanent and is likely to remain so in the climatic conditions. Opium is used in bowel complaints and malaria and other diseases at the fisheries and salt fields and wherever the climate is damp and unhealthy. Actual consumers try to conceal their failing as long as possible but people are generally indifferent."

More anxiety is manifested on account of the cocaine habit which is said to be well established and increasing in the district. Though at one time there was a tendency to think that cocaine was being taken instead of opium, it is reported that this substitution has taken place to so small an extent as to be almost negligible. 19,980 grains were seized in 1913-14 and an even larger quantity in the previous year. Cocaine

CHAPTER XI.

Local Self-Government.

Bassein *Municipality—General—Conservancy—Lighting—Water-supply—Fire protection—Finance—Rural Boards—Ngathainggyaung Municipality—Kyonpyaw Town Committee.*

Early in the history of British rule in Burma it had been recognized that towns had special sanitary and other requirements which needed special treatment and in the large towns the foundations of Municipal institutions were laid from the very first with the object of giving the inhabitants a share in the management of their local affairs. A "Municipal tax" levied in towns to provide for the police, for the payments of establishments necessary to preserve cleanliness, and for local improvements was collected in Bassein within a few years of the British occupation and in Ngathainggyaung from 1857. This fund, which was apparently administered by the Deputy Commissioner, was made up of a tax on all land covered by buildings, bazaar rents, and a few petty items. For Bassein town the fund in 1870 amounted to Rs. 14,895, taxes on areas covered by buildings, and rent from Government bazaar, etc., Rs. 22,927; the population was then 18,753 and the number of tax-payers 3,965.

On the 24th March 1874 "An Act to provide for the appointment of Municipal Committees in the towns of British Burma" received the assent of His Excellency the Viceroy and Governor-General in Council. Rangoon and Moulmein were the first towns to have Committees appointed on July 31st, but Bassein was little behind hand and on September 30th the first Municipal Committee was appointed consisting of eighteen members, three official and ten non-official ordinary members and five official *ex-officio* members. The five *ex-officio* members were the Commissioner of Pegu, the Executive Engineer, the Sanitary Bassein Municipality.

Commissioner, the Port Officer, and the Civil Surgeon. The President, who was appointed by the Local Government, was the Deputy Commissioner. The Administration Report for 1875-76 says:—"The first few months that followed the initiation of Municipal Government were necessarily devoted to constructive, rather than executive work. The total collections of the fund during the year amounted to Rs. 97,784, of which the largest item Rs. 26,080 accrued from Government bazaars. The land assessment in lieu of capitation tax, recently conceded from Imperial revenues, realized Rs. 24,680. The expenditure amounted to Rs. 79,460, of which Rs. 44,680 were spent on Public Works. The area comprised within the Bassein Municipal limits is larger than Rangoon, covering about 1,489 miles. Several new roads have been completed, and communication made easy and direct between the different parts of the town. A spacious bazaar was constructed by the Public Works Department before the establishment of the Municipality in place of the old and unserviceable building previously standing. Among other engineering improvements may be mentioned the construction of two hospitals, three guard-houses and two bridges, besides a slaughter-house, conservancy stables, culverts and drains."

The Committee thus made an energetic beginning and as "from August 1876 the town had the benefit of an able Municipal Engineer, the conservancy arrangements were greatly improved, swampy ground was filled up, and other necessary measures adopted, with a marked improvement in the general public health."

In its early days the Municipality derived its revenues from taxes on houses or lands, license fees, wheel taxes, market rents and fines, and land assessment in lieu of capitation tax. The house tax was one pie per square foot on all lands covered by buildings within Municipal limits, and the land tax five per cent. of the annual value on all lands not covered by buildings. The average tax per house per annum amounted to Rs. 6-1. "Wholesale, retail, and tavern licenses" which in 1877 and 1878 brought in one-eighth of the revenue were an important item, and even in 1875 each hack cart paid an annual tax of Rs. 4.

The Municipality also controlled four public ferries but its biggest source of revenue was the Athègyi bazaar, the rents from which in 1878 amounted to nearly Rs. 25,000 or over a quarter of the revenue. The biggest single item of expenditure in 1877 was a sum of nearly Rs. 11,000 for "Pay of Police force," but Public Works accounted for

over Rs. 43,000. Between 1875 and 1877 the population decreased by 1,659, due it was said to the enforcement of rules forbidding the use of the thatch for roofs within the town. The Committee gradually extended its activities and in 1879 took over the hospitals and schools, other than Government and denominational schools, within Municipal limits; funds were however small and even when the Committee had been relieved in 1882 of the charges for Police, which in 1881 had been Rs. 16,659, the problems of conservancy, improvements of roads and swamps, and lighting were naturally the first consideration. The Committee which had decreased to 14 was in 1879 raised to 17 members: in 1880 there were only 10 members, and the membership only became fixed when in 1883 the Chief Commissioner, by a notification dated 15th February 1883, directed that 12 non-official members of the Committee should be appointed by election to represent the different communities of the town. Five members were allotted to the Burmese, one each to the Chinese, Karens, Musulmans and Hindus, and three to the Europeans and Eurasians. It is interesting to note that of 2,298 registered voters no less than 1,740 went to the poll. The Committee as thus constituted had 16 members with the Deputy Commissioner as President, the Executive Engineer, Civil Surgeon, and Port Officer being *ex-officio* members: it still retains the same constitution. From 1883 the business of the Committee has been carried out on a regular plan: elections are held every two years but there are few contested elections.

The Committee meets once a month and there are also Finance, Public Works, Public Health, Bazaar Assessment, Election, and Hospital Sub-Committees, which meet at regular intervals. The quorum for an ordinary Committee meeting is five, and for a Sub-Committee meeting two, but the attendance is as a rule good, the percentage being over 50 per cent. For local purposes the Municipality is divided into 41 wards under 39 ward-headmen who receive commission on the taxes collected by them.

General.

Spreading as it does over an area of just under twelve square miles the Municipal area has always presented grave problems. In 1875 the Municipal Report stated the extreme difficulty of dealing with the conservancy, and in 1890 the Municipal Engineer wrote: "Of the 14 square miles which constitute the town, $4\frac{1}{2}$ square miles are swamp and marshy land unfit for human habitation. There are no properly constructed drains over or in the vicinity of this area, to carry off the water caused by rainfall or otherwise. When

the river is in flood the whole of this marshy land is submerged. A considerable portion is literally perforated with cess-pools of different depths. Not half a dozen of these are constructed with masonry. They are allowed to fill and when they overflow another hole is dug within a few feet of the old spot."

The nature of the soil and the elevation of the town generally, the numerous creeks and swamps, and the heavy rainfall thus made communications and sanitation the first consideration, and the fact that about one-third of the land area lay on the west of the Ngawun made the problems still more difficult.

In 1875 the entire length of made roads was only 9½ miles, but at the end of a single year of the Committee's administration 13 miles of metalled and 10½ miles of unmetalled road had been completed. By 1881 the mileage of metalled roads amounted to 22¾ miles, but the difficulties of dealing with road metalling were increasing. "Stone metal (Bombay trap) for the purpose of road repairs, formerly so abundant and cheap, is becoming more costly and difficult to procure from the diminished number of sailing ships bringing ballast and the increasing number of water ballast steamers." Laterite metalling was unsuitable and there was no good stone in the neighbourhood. It is not surprising therefore that the road programme made less progress. Stone from Hainggyi was tried but it was expensive. Since the Burma Quarries Company started in 1910 the Municipality has been able to secure a larger quantity of good metal. The town has now 33 miles of metalled and 3 miles of unmetalled roads, most of which are in good condition. Consolidation is effected by a steam roller which the Committee purchased about five years ago.

Coupled with the problem of roads was the problem of swamp reclamation and river embankment. There was a river frontage of over eight miles: all this front was low and sloping, numerous creeks ran into the river, and the nature of the soil made the embankment of the foreshore very difficult: 4½ square miles of the town was swamp, most of it below high water and flood level. The Athgèyi swamp for instance comprised 23 acres varying from one to four feet below ordinary high-water spring tides. This with the Tagaung Pagoda road swamp and numerous other small and low areas have been gradually reclaimed at great cost, until now the flooded area in the town is small except at the time of very high tides in the rains. It is however recognized that this is not yet a satisfactory con-

dition and an important proposal has been put forward to employ the dredger "Sir Frederic Fryer" to pump sand from the river and thus raise the general level of all the low-lying areas within 2,000 feet of the bank. The banks have also been dealt with and now a fine metalled road runs along the left bank of the river or close to it for about six miles. Fifty-six bridges and culverts cross the numerous creeks and drains. The Public Works Department is supervised by the Municipal Engineer who has under him a staff of 82 inspectors, carpenters, and coolies.

Conservancy. Spread as it is over so large an area with low tracts and a river affected by tides, conservancy has been peculiarly difficult. Public latrines were commenced in 1876, and by 1877 a staff of 34 coolies and sweepers was entertained. The conservancy however was ineffectively done, and, after several schemes for improving the sanitary condition of the town had been discussed, it was decided in 1889 to purchase three miles of tramway for conservancy and general purposes. This effected a great improvement and the system was extended until now there are about five miles of tramway on the left bank of the river, and cess-pools have been abolished in fifteen wards for which there is a complete system of night conservancy with three Sanitary and two Conservancy Inspectors and 133 coolies and sweepers.

Lighting. The question of lighting the town has also been of considerable difficulty owing to the great length of roads and the numerous open areas. Lighting commenced with nine lamps in May 1876, in 1881 the number had risen to 32, and thenceforward there was a steady increase, the number of lamps in 1914 being 514 ordinary street lamps and 4 Kitson lamps. The lighting, which is carried out by contract, is fairly complete in 36 wards; the lighting tax is levied only on buildings within a radius of 1,000 feet from the nearest lamp.

Water-supply. The water-supply has always been one of the greatest difficulties of the town and no satisfactory solution of the problem has yet been found. The number of wells in the town in 1890 was about 800, few of which were more than roughly-lined holes in the ground with an abundant supply of water in the rains but dry during March, April and May. The river, owing to the tides, has in the dry weather a downward flow for about 15 hours a day only, and there is contamination not only from the town itself but from large numbers of villages on the river banks.

Thus the question of the best means of supplying the town and shipping with a satisfactory water-supply was

one of the early problems of the Municipality. The original scheme proposed about 1878 was to obtain the supply from the Ngawun. This had to be abandoned owing to changes in the river bed, which, it was anticipated, might have the effect of rendering the river at Bassein brackish and the water unfit to drink. There is within Municipal limits and to the east of the town some high land which, in its fall to the west, formed several depressions in which water collected known as Kanthonzin. A new scheme was put forward about 1881 to obtain water from this high ground at the back of the town: it had strong support and the Chief Commissioner promised a Provincial contribution of Rs. 50,000 and a contribution from the Port Fund of Rs. 50,000 if the scheme were finally approved. It was then hoped that "the Committee might be able before long to carry it into effect without imposing any extra taxation and with a very moderate loan." The scheme was estimated to cost Rs. 2,60,000 and in 1882 Rs. 17,530 were spent on preliminary preparations. The scheme was however dropped, and a proposal made by Mr. Addis, Municipal Engineer, in 1890, to use "Anderson's Patent Revolving Purifier," to render the river water fit for drinking purposes, came to nothing. In 1896 to 1898 a number of experimental borings were made for artesian wells on both sides of the river. The supply at depths of about 300 feet was abundant but the quality was so bad that all thoughts of supplying the town with water from such wells had to be abandoned. The Kanthonzin scheme was then revised and in 1899 the Sanitary Engineer prepared a scheme for a reservoir from which water was to be raised to a higher level and then distributed by means of pipes over the town. The estimate amounted to over four lakhs of rupees but the Committee did not approve of the scheme. The proposal was again revived in 1908 and an estimate for the scheme to cost about two lakhs was approved by the Sanitary Board in 1909.

Work was accordingly begun in September 1910, and steady progress was made with the dam up to November 1911, by which time over one and a quarter lakhs had been expended on the work. The reservoir did not fill as had been anticipated, and, in July 1912, the work done was inspected by the Officiating Sanitary Engineer who found leakages causing an estimated loss of 14 feet a year. Thus, instead of the 68 million cubic feet they were designed to provide, the lakes were estimated to supply only 38 million cubic feet. The work was therefore suspended

by order of the Local Government. A scheme has now been projected to sink ten artesian wells in the neighbourhood, lead the water from them into a low level reservoir and pump it into a service reservoir. An experimental six-inch tube well has been sanctioned and a grant of Rs. 10,000, the estimated cost, made by the Local Government. It is recognized that the water-supply is a pressing problem as a great part of the congested area of the town is supplied with water carted from the Myothitkon wells a mile away and sold at the rate of two kerosene tins for nine pies.

The Municipal connection with hospitals and education is dealt with in the chapters on Public Health and Education.

Fire protection.

Bassein has not suffered so heavily and so often from fires as many other towns. For protection against fire small manual engines were bought from time to time, and by 1897 the Committee had three, maintained and worked by the Fire Brigade consisting of Municipal High School boys, Port Office kalassis, and Municipal coolies. In 1903-04 three fires broke out, two of which at Kungyan and Obodan were small, but the third in the central portion of the town at Athègyi quarter was the most disastrous fire which had ever occurred in Bassein. Seventy houses were burnt down in a few hours and the loss in the value of property was estimated at four and three-quarter lakhs. After this fire the Committee purchased a steam fire engine at a cost of over Rs. 16,000, and a qualified engine-driver, stoker, and lascar were engaged. Since 1904 the only fire of any importance has been the burning of Messrs. Diekmann Brothers and Company's rice mill in July 1907. In 1914 the Committee obtained sanction to purchase a motor fire-engine to cost about Rs. 20,000. At the same time the area in which buildings with walls or roofs of bamboos or other inflammable material were prohibited was extended to include all the congested quarter west of the Jail road and along the left bank of the river.

Finance.

The Municipal Revenues have suffered great fluctuations from time to time. At the beginning the land revenue in lieu of capitation tax which was collected by the Deputy Commissioner was regularly assigned to the Municipality. In 1889 however the proceeds of this tax and of the Excise, which in 1888 came to over Rs. 44,000, were withdrawn from the Municipality, though Government granted a sum of Rs. 41,000 for two years by way of compensation. The grant of Rs. 5,000 from the Port Fund was also discontinued. The result was that the revenue of Rs. 1,30,913 in 1890

dropped to Rs. 1,01,600 in 1893. The Committee had therefore to introduce new taxation. Hack cart and hackney carriage license fees had been raised, and in 1892 a wheel tax of 8 annas per wheel was introduced. Next to come was a lighting tax of two per cent. on the annual rental value on all buildings within 1,000 feet of a lamp post. A bullock cart tax followed in 1893, and in 1894 a scavenging tax of four per cent. on annual rental values. In 1893 the incidence of taxation per head of the population was Rs. 1-11-6 and of income Rs. 3-9-1, in 1903-04 this had risen to Rs. 2-1-6 and Rs. 3-4-8 and in 1912-13 to Rs. 4-11-0 and Rs. 3-2-11 respectively. In the last ten years the revenue has increased from Rs. 1,48,852 to Rs. 3,12,909 but of this Rs. 2,360 and Rs. 69,439 represented grants from Government, local, and other funds. Under the several heads revenue from markets and slaughter-houses had gone up from Rs. 55,898 to Rs. 86,229, conservancy taxes from Rs. 11,519 to Rs. 29,130, lighting taxes from Rs. 10,294 to Rs. 18,854, tolls and ferries from Rs. 14,275 to Rs. 24,214, and taxes on houses and lands from Rs. 28,676 to Rs. 48,010. In his report for 1912-13 the President wrote:—"The Bazaar Revenue is still small compared to what it would be if all the stalls were rented at anything like the rate fetched for some of those auctioned, but, in the last few years, the practice has sprung up of allowing certain stall holders who had succeeded in getting their stalls at very low rents to retain them year after year without auction." The attempt to increase the Bazaar Revenues led in 1913-14 to great friction but it is hoped that the Municipality will ultimately secure an increasing revenue. The need has been felt for a new bazaar and a Government grant of Rs. 30,000 was given towards the cost. This however was not spent as it was found that a larger building was needed than was first proposed. Plans were prepared for a building to cost two and a quarter lakhs but its construction has not yet been decided on.

In the period 1903-04 to 1913-14 the expenditure increased from Rs. 1,62,299 to Rs. 2,60,930. Expenditure on general administration decreased from Rs. 11,356 to Rs. 11,093, and on Public Works from Rs. 1,10,812 to Rs. 77,312, but on lighting increased from Rs. 12,094 to Rs. 14,282, on conservancy from Rs. 25,281 to Rs. 40,121, on hospitals and dispensaries from Rs. 20,066 to Rs. 64,147, on markets from Rs. 9,855 to Rs. 16,543. Thus since 1874 the Municipality has made continual progress and from its small beginnings has now a permanent establishment of 293.

The increase in the trade and population of the town has coincided with a rise in the efficiency of the various departments and a keener public interest in Municipal affairs. The incidence of taxation is by no means high and the incidence per head for 1912-13, namely Rs. 3-5-4, compares not unfavourably with Rs. 4-5-11 for Akyab and Rs. 4-8-1 for Moulmein in the same year. Though much remains to be done the Committee has a fine record of nearly forty years' work.

Rural Boards. For rural parts an attempt was made in 1884 to widen the interest of leading men in public matters by establishing Rural Boards for the management of minor public works and other matters in rural tracts. The object of the measure was "the gradual introduction of a non-official element into *this part of the administration and the leading of people to take an interest* in the improvement of their own neighbourhood." The boards were to meet once a year and it was expected that part of the ten per cent. cess on land revenue would finally be dealt with by the Boards. Two boards seem to have been constituted, one for Bassein and one for Ngathainggyaung subdivision. There were apparently very few meetings, and the boards seem to have disappeared into oblivion. There was in fact, in view of local conditions, little prospect of such bodies being of any use, as only two centres of importance, Bassein and Ngathainggyaung-Daunggyi, had committees.

Ngathainggyaung-Daunggyi and Pandaw had "Municipal rates and taxes" from 1857 and 1865 respectively: in 1874 these rates and taxes were styled Town Assessments.

Ngathainggyaung Municipality. Ngathainggyaung-Daunggyi Municipality was constituted on 24th August 1887 with at first the Subdivisional Officer as *ex-officio* and eleven nominated members. This was in pursuance of the policy noted in the Report on Municipal Administration for 1886-87: "The Chief Commissioner is of opinion that as a rule all large towns at which a European officer is stationed should be constituted municipalities, as in no other way can the conservancy and other matters be managed satisfactorily." The local revenue in 1876-77 had been Rs. 6,452 and the only tax outside bazaar rents and leases of ferries was the house tax, assessed after the Burmese method according to the number of posts in each house, a two-post house paying 8 annas, a seven post house Rs. 10 per annum. The revenue had grown in 1893 to Rs. 14,702, and in 1913-14 to Rs. 34,329. The total expenditure in 1893-94 was Rs. 16,611 and in 1913-14 Rs. 29,071. In the latter year Rs. 8,634 were

spent on conservancy, Rs. 5,611 on hospitals and dispensaries, Rs. 3,085 on markets and slaughter-houses, and Rs. 3,576 on education. The incidence of taxation is only Rs. 1-5-8 per head.

The Municipality which has an area of three square miles is divided into six wards, four on the Ngathainggyaung and two on the Daunggyi side of the town. Each ward is under the charge of a ward-headman.

Kyonpyaw Town Committee.

In 1889 it was proposed to appoint town committees for Kangyidaung and Kyonpyaw, but it was pointed out that both places were small and the proposal seems to have been dropped. A town committee was not constituted for Kyonpyaw till 8th May 1906 with two *ex-officio* and five nominated members. In its first year the revenue was Rs. 6,748 and expenditure Rs. 3,068. By 1913-14 the revenue was Rs. 27,435 and the expenditure Rs. 19,221. The incidence of taxation was Rs. 1-2-7 per head.

CHAPTER XII.

EDUCATION.

Development from Burmese times—Modern education—Higher education—Sgau-Karen High School—Other Mission Schools—Primary educatoin—Administration.

Development from Burmese times.

In Burmese times the only schools were those in the *hpôngyi kyaungs* or monasteries. All boys were sent to the monastery, even if for a short time only, but they were looked upon more as attendants on a religious man than as pupils in a school. Yet all boys who stayed long enough were taught to read and write. Pâli texts were learned by rote and a few of the more promising boys were taught a kind of arithmetical and astrological calculation used chiefly in forecasting the future. It is to the teaching in the monasteries that the Burmese have always owed and still owe their comparatively high standard of literacy. Almost immediately after the annexation, the American Baptist Missionaries, who had for many years devoted much attention to the education of the Karens in Tenasserim, established at Bassein a Normal School to which both boys and girls were admitted. In 1860 a Karen Normal and Industrial Institute was opened also by the Baptist Missionaries. In 1861 the Roman Catholic Mission established St. Peter's

Institution in two departments, English and Vernacular. In 1868 a Pwo-Karen Normal School was opened by the Baptist Missionaries. Bassein was thus exceptionally well provided for. It was soon realized that the village monasteries provided a splendid basis for a complete system of primary education and in 1866 Sir Arthur Phayre successfully started the system by supplying *hpôngyis* who were willing to comply with very simple requirements with simple text books, while teachers were employed to go round to the *kyaungs* and introduce the teaching of new subjects. Education, however, continued to be of a fragmentary nature, for attendance was not rigorously insisted on and few *hpôngyis* would interest themselves in the teaching of new subjects. By 1870-71 there were four missionary schools with 231 pupils, and twenty-seven other schools receiving Government aid. To stimulate monastic teaching a Deputy Inspector was appointed in 1871, but the experiment had no great success and in 1877-78 it was stated that "priestly exclusiveness, jealousy of European books and methods, and the interruption of monastery duties mark the value of monastic schools." A Government District School was started in Bassein in 1874 and was supported mainly by Local Funds, by a contribution from the Municipality, and by fees. In 1879, however, the Government expenditure was taken over by the Municipality: this system did not work well, and in 1890 the control of both Municipal and aided schools together with the Municipal assignment for education was handed over to the Director of Public Instruction. Thus the foundations of a wide system of education were laid early and the results are seen in the fact that of every 1,000 males the number of literates has increased from 380 in 1891 to 414 in 1901 and 444 in 1911. More extraordinary is the advance in female education: in 1891 only 32 out of every 1,000 females were literate; in 1901 the number had gone up to 75 and in 1911 to 100.

Modern education.

The *hpôngyi kyaungs* still constitute the foundation of the educational system, and under the present system all schools, whether monastic or lay, which teach the courses prescribed by Government are classed as "public" schools and are regularly inspected and examined. They are given grants of money, known as equipment, building, salary, and result grants. The last of these is the most important, and is awarded in the form of a sum per head on the passes obtained at the yearly examinations held by the inspecting staff. All other schools are termed "private" and though

visited are not assisted in any way. In 1891-92 there were 103 monastic and 32 lay "public" Burmese schools with 3,782 boys and 352 girl pupils, and 139 monastic and one lay "private" schools with 1,018 boys and 20 girl pupils. In 1913 there were 93 monastic and 138 lay "public" schools with 9,161 boys and 3,938 girls, and 275 monastic and three lay "private" schools with 3,393 boys and 369 girls. Of the "public" monastic schools 24 are in Bassein and 20 in Thabaung township. Forty monastic "private" schools in Ngathainggyaung township have no less than 875 pupils. Some of the monastic schools acquire considerable fame: the best known are those of U Meda, Ngathainggyaung, a vernacular school with a strong teaching staff and reputed to be one of the best monastic schools in Burma, of U Nandiya at Ngathainggyaung, and of U Pandita at Tandawgyi. There are also four Mahomedan and six Tamil schools, all in Bassein town. It is perhaps among the Karens that the most striking educational advance has been made. In 1891 there were 76 Karen lay public schools with an attendance of 1,300 boys and 959 girls, and 34 private schools with 629 pupils. By 1913 there were 157 lay public schools, of which the most important are the Government Vernacular Schools in Bassein and Kyonpyaw, with 3,013 boys and 2,274 girls, and 26 private schools with 242 boys and 223 girls.

Higher education.

Higher education is well provided for in the Anglo-Vernacular Schools. The Government District School started in 1874 had from the beginning a considerable attendance. Fees of Re. 1 a month were charged and in 1877 the attendance was 125. The cost of the school in that year was Rs. 6,919. It afterwards became a high school and is now staffed by a European head master and 16 teachers. It was taken over by Government in 1913, and in that year had an attendance of 300 boys and 2 girls and cost Rs. 26,701, Rs. 12,003 being collected in fees. The teaching is up to the Calcutta University Matriculation examination and Burma High School Final. The need for better buildings has been strongly felt and a combined school and hostel building to be constructed on the Strand Road at a cost of over a lakh of rupees has been sanctioned, while an officer of the Indian Educational Service is to be appointed as Principal.

Sgau-Karen High School.

The biggest Anglo-Vernacular School is the American Baptist Sgau-Karen High School, started in 1860 as the "Bassein Normal Industrial Institute" by the Reverend Mr. Beecher. From the beginning the buildings were

erected by the voluntary contributions of Christian Karens and in 1869-70 the efficient state of the school and its success under Reverend Mr. Carpenter in contrast to other aided normal schools for Karens was commented on in the General Administration Report. The institution is probably unique in that the school has accumulated an endowment of over a lakh of rupees, part of it invested in a commercial and technical enterprise, a saw mill, which yields not only good interest on the capital but gives a practical business and mechanical training to the Karens connected with it. By 1903 buildings worth over a lakh of rupees had been constructed none of which had come from Government or the Mission Society, and in the ten years 1903 to 1913-14 dormitories, dining rooms, bathrooms, steam cooking plant, and gymnasium were added at a cost of over Rs. 50,000 of which Rs. 10,000 was contributed by Government. The school has now no less than 816 pupils, 539 boys and 277 girls, with a Missionary Superintendent and two European lady teachers in charge and 21 other teachers. The Reverend Mr. Nichols says of the school: "It was the policy, from the start, of the leaders that the school should make it possible for any boy or girl among the people to receive an education up to the limit of the scope of the school, if not absolutely free, yet practically so in so far as the board and tuition were concerned." The trustees of the school are elected from among the Karens and the school is supported partly by a grant from the Government and Municipal Funds, which covers about one quarter of the total expenditure, but mainly from its own resources. "Practically all the work required in the care of the buildings and compound, including minor repairs, purchase, preparation, and serving of food, is done by pupils and is considered an essential part of their education."

Other mission schools.

The American Baptist Mission established a Mission to Burmans in Bassein about 1855 and in connection with this a school was started in 1893. It has been successful and now has 339 boy and 61 girl pupils with a European Superintendent and 13 teachers. The Baptist Mission Pwo-Karen Middle School was begun in 1860 and in 1863 had 24 pupils. Pwo-Karens are much more backward than Sgau-Karens and little progress was made at first. By 1903 the school had 111 pupils and since then under the Reverend Mr. Cronkhite progress has been rapid as in 1913 there were 149 boys and 67 girls in the school.

The Roman Catholic Missionaries have now four schools in the district with 170 pupils. In Bassein the European

Department of the school has 37 pupils. There are also a boys' school with 46, and a girls' school with 48 pupils, and schools at Ywegon and Paukseinbe.

An interesting attempt was made by Father D'Cruz in 1890 to supply a sound industrial education. He opened in connection with St. Peter's Institute an industrial engineering school the object of which was to enable apprentices to obtain certificates as drivers and second class engineers. A building and other grants were given but sufficient work was hard to procure and the experiment unfortunately failed.

Primary education.

To provide primary education in remote villages where there were no vernacular schools eight Rs. 500 schools were erected in 1905 by the Education Department and placed under the supervision of local committees. The members of these local committees however showed little willingness to contribute to the cost of the necessary annual repairs, and the buildings were in cases unsuited to withstand the wind and rain of a delta district, so that it is not surprising that at present only four are in existence, at Thabye, Pyinkaing, Zayathla, and Chaungzauk.

Administration.

The district forms part of the Irrawaddy Education Circle which is in charge of an Inspector of Schools with headquarters at Bassein. Since 1910 the Burmese schools have been under the supervision of two Deputy Inspectors and one Sub-Inspector of Schools. The Karen schools are under the supervision of one Deputy and one Sub-Inspector of Schools. The total number of public schools is 390 with 12,332 boys and 6,259 girls. For these there were 131 certificated and 778 uncertificated teachers and the fees collected in the year 1913-14 amounted to Rs. 12,267. To the cost of education Provincial and Imperial Funds contributed Rs. 13,076, District Cess Fund Rs. 45,421 and Municipal Funds Rs. 12,900.

CHAPTER XIII.

PUBLIC HEALTH.

General—Cholera—Small-pox and Vaccination—Malaria—Tuberculosis—Enteric and Beri-beri—Plague—Other diseases—Hospitals—Sanitation—Vital Statistics.

General.

In 1862 Colonel Phayre, Chief Commissioner, circulated a memorandum on the sparseness of the population of

British Burma. The then Deputy Commissioner of Bassein Mr. O'Riley wrote :—"The rate of deaths among the native Burmese is decidedly higher with the infantile portion than the adult community, except in periods when the cholera assumes an epidemic form." He goes on to speak of the "periodical visitations of the small-pox, measles, fever, bowel complaints and other disorders more or less generally prevalent" and comments bitterly on the want of care of parents for their offspring and the general indifference to sanitation. At the same time the Civil Surgeon of Bassein wrote: "Bassein has become one of the most healthy stations in Burma, mainly owing to the strict attention paid to drainage and conservancy". It was too noted in the first report on the working of the Municipality (1875-76) that the town of Bassein had, prior to 1873, enjoyed comparative immunity from the epidemic diseases which were the scourges of the towns in the valley of the Irrawaddy.

Cholera.

From 1872 that immunity was a thing of the past, for in that year cholera was the cause of 141 deaths in Bassein town alone. Thenceforwards outbreaks were common and hardly a year passed without the occurrence of the disease in the hot weather. In 1875 and again in 1878 it was epidemic in the district and in 1885-86 it caused 1,062 deaths, and in 1886-87 1,136 deaths of which 98 were in Bassein Town. There were again severe epidemics in 1888; in 1890-91 an epidemic broke out in the middle of January and lasted till the end of June causing 194 deaths; in 1893-94 deaths from cholera from March to June numbered 109. Even up to the present year cholera has continued to be one of the diseases most feared: it is always most virulent in localities along the river bank and in the neighbourhood of swampy and ill-drained sites: in 1913 the deaths due to cholera in Bassein town and district numbered 262 and 179 respectively.

Small-pox and Vaccination.

In the early seventies small-pox appears to have been one of the most terrible scourges and it is recorded that in 1875 in Bassein town 149 people died of the disease. Easily carried especially with a large population in continual communication with all the large delta districts, outbreaks were frequent. The disease too was often spread by inoculation and vaccination was at first unpopular. In 1863-64 only 31 vaccinations were performed and all were unsuccessful. However 1,156 people were vaccinated in 1875. It is stated that "it had been customary in the Bassein district to teach any inoculators professing their

willingness to substitute vaccination for inoculation how to vaccinate properly but there was necessity for constant supervision". In 1888 the Vaccination Act was extended to Bassein and in 1890 to Ngathainggyaung-Daunggyi.

In 1893-94 five vaccinators were employed in the district and 9,428 vaccinations were performed. The average number of operations for the years 1901-02 to 1910-11 was 16,557, the highest number being 23,480 in 1905-06, a year in which there was a violent epidemic, 117 people being treated in the hospitals alone for small-pox. In 1913 the district vaccination staff of one native superintendent and seven vaccinators performed 14,064 and the Bassein town staff 1,279 vaccinations. In spite of the protection afforded small-pox is still common and in 1913 there were in the district 51 and in Bassein town 105 deaths from this cause.

Malaria.

Although the district lies so low and is so liable to flooding malaria is by no means widely prevalent except on the west coast, near the hills on both sides of the Yomas, and in the salt fields in the south of Ngaputaw township. Near the Yomas a virulent type of malaria occurs, common to the low hills in this district and the Magwe and Arakan divisions. The most malarious part of the district is however in the salt fields, where there is probably an epialurgic mosquito which breeds in brackish water as in Port Blair.

Statistics are not reliable as the rural Burma invariably classes as "fever" any disease not associated with definite symptoms such as small-pox or dysentery. In a water-logged country protection is obviously impossible and little can be done except by quinine prophylaxis. Quinine has been prepared for sale by Government at small cost for years and has made some headway since the "soloid" form was introduced, nearly 1,100 packets representing about 450,000 grains being sold in 1913.

Tuberculosis, enteric and beri-beri.

Tuberculosis, the prevalence of which among clerks is exciting some attention, is common and probably increasing, while enteric fever is of frequent occurrence.

Beri-beri is associated mainly with the Indian coolie class. The eating of uncured rice in Burma instead of the cured rice common in India, poverty, and living in damp houses, seem to be the most important factors in the disease.

Plague.

In spite of the efforts made to keep plague out of Bassein the disease made its appearance in June 1905. The first case is said to have been imported either from Meiktila or

Rangoon and the disease quickly took hold, there being 205 seizures with 168 deaths from June to October. All efforts to stamp it out failed and from 374 deaths in 1907 the number rose to 526 in 1910 in Bassein town.

In January 1906 the disease appeared at Kanni and Ngaputaw townships and cases occurred during the year in all the townships except Kyaunggon. In the district however the disease did not spread to any serious extent the highest number of deaths being 110 in 1907. While the number of deaths in 1912 fell to 27 in Bassein town and 17 in the district it rose again to 306 and 47 in 1913.

Other diseases. Among other diseases dysentery and diarrhœa are common, and generally bowel complaints are prevalent throughout the year.

Venereal diseases are very common in the towns, the highest figure for persons treated in hospital being 879 in 1909, the average for five years 1908 to 1912 being 695. It may be mentioned that Bassein for some ten years had a Lock Hospital under the Contagious Diseases Act: when compulsory attendance was abolished the voluntary system was tried but proved a complete failure.

The number of lepers in the district is very small being only some 37 per 100,000 of the population. Deaf-mutism, blindness, and insanity are also uncommon, the proportion being below 50 per 100,000.

Hospitals. There are now four hospitals in the district at Bassein, Ngathainggyaung, Kyaunggon and Kyonpyaw. The first hospital in the district was at Bassein of which the first mention about 1860 is that "an old building had been altered and repaired for a charitable dispensary and hospital". By 1871 two small hospitals had been provided, one for Europeans, a teak wood building 40 feet square and capable of accommodating six or eight patients, the other for natives, a pucca building "with a floor of clean sand and a verandah all round" with sufficient accommodation for 16 patients. In 1871 the total number of in-door patients was 117 and of out-door patients 1,695. The total expenditure was only Rs. 1,451 of which subscriptions amounted to Rs. 367 and Government grant Rs. 922. At that time the Municipality had no distinctive control over the old dispensary and hospital, but in 1878 they were transferred to the committee which undertook all the dispensary charges, while Government undertook to provide the salaries of the medical officers and the cost of European medicines. In 1879 the expenditure was Rs. 3,041. By 1890 it had risen to Rs. 8,139 while the number

of in and out patients had increased from 5,990 in 1879 to 8,212 in 1890. General improvements were carried out from time to time and in 1897 quarters for a nurse were built at a cost of Rs. 2,720 out of the subscription fund. In 1901 the number of in and out patients treated was 988 and 16,311 respectively. The Porter operating theatre was built in 1904, and in 1907 a Mansfield oil gas installation for the operating room was fitted up. The operating theatre was completely reconstructed in 1914.

To meet the growing needs of the town a lady doctor was appointed in 1907 and a female dispensary supported entirely from Provincial Funds opened. It was kept open until 1912 when the lady doctor went on leave. The establishment was then attached to the Civil Hospital as the out-door department for women, and still remains attached in order that the Civil Surgeon may have better control and that the out-door and in-door departments for women may be in closer contact. Another lady doctor was appointed in 1914. In 1913 the construction of a new female ward was begun: the building was completed in May 1914 at a cost of Rs. 26,322 of which a sum of Rs. 19,110 was met from subscriptions collected for a memorial to his late Majesty King Edward VII. A new out-door dispensary at a cost of Rs. 18,516 is now in course of construction, and improvements to the operating room are being carried out at a cost of Rs. 3,847.

The staff of the hospital and female dispensary under the Civil Surgeon now comprises one European matron, three Sub-Assistant Surgeons, one lady doctor and 37 others.

Ngathaing-gyaung Hospital.

A Hospital Assistant was provided for Ngathaing-gyaung in 1876-18 as it was the headquarters of a European Assistant Commissioner. A dispensary was opened there in 1877-78 and in the first year 342 patients were treated. In 1901 the number of patients were 178 and 5,863 respectively and this number had increased in 1913 to 205 and 9,001 respectively. The hospital and the dispensary which are supported by the Municipality, with a contribution of Rs. 1,000 from the District Cess Fund, are old and unsatisfactory buildings which however are not likely to be soon renewed.

Kyaunggon.

In 1904 a third class dispensary was opened at Kyaunggon and 1,641 out-patients were treated during the year. The cost of the dispensary—Rs. 1,103—was met from Local Funds: the building was a Burmese hut and unsuitable for its purpose. In 1913 however a new hospital was

completed consisting of wards for 8 males and 2 females, with a central administrative block, and dispensary and quarters for the staff. The buildings cost over Rs. 12,000. During 1913 out-door patients numbered 8,696 and in-door 151: the cost of establishment and upkeep—Rs. 2,665—was met by the District Cess Fund.

A dispensary was also opened at Kyonpyaw in 1909 at a cost to the Town Fund of Rs. 1,261. It is supported by the Town Committee, with a grant of Rs. 1,000 from the District Cess Fund. The cost of the hospital and the dispensary in 1913 was Rs. 1,599 and the total number of patients treated 136 in-door and 9,159 out-door. **Kyonpyaw.**

Soon after the construction of the Municipal Committee there was a general desire to improve the town. Sanitation was considered one of the first necessaries and in order to give intelligent natives an interest in the subject of medicine and sanitation a medical class was started in 1875 under the tuition of the Civil Surgeon. The lectures at first attracted some attention but the number of students gradually dwindled and the experiment failed. Conservancy is carried out on more or less systematic lines in Bassein and Ngathainggyaung. Elsewhere in rural areas there is little attempt at any protection of the public health. There is a Village Act with rules designed to improve the sanitary condition of villages. The enforcement of these depend on the character of the village headmen and infrequent official visits, and, as might be expected among an agricultural population, the rules are mainly honoured in the breach. Many of the villages are riverine and are particularly liable to become insanitary owing to their cramped situation on the river banks, while growing villages hemmed in by cultivation have no opportunity for enlarging their area and are often hopelessly congested. **Sanitation.**

In rural areas the Burman medicine-man or *saya* still reigns supreme: occasionally one may be found who has among his stock some simple English medicines, but native remedies, simples, and charms are still practically the only remedies available to the mass of the people. Among the Karens with their large proportion of educated boys and girls modern medicines and medical methods find more favour. In Bassein town there are three private practitioners, who have qualifications for the practice of Western medicine, and they are resorted to in considerable numbers by the more educated sections of the community.

A record of births and deaths is kept by village headmen and in the towns by ward headmen who are provided **Vital statisti**

with books for registering details. Though formerly the registration was badly done the better education of the younger *thugyis* and more regular inspection by officials has rendered these statistics much more reliable. Diseases may not be always correctly diagnosed in giving the causes of death but on the whole the numbers are fairly reliable. Statistics are given in Volume B.

CHAPTER XIV.

MINOR ARTICLES.

Bassein—Early history—The Municipal area—General description—Principal streets and Public buildings—Anglican Church—Newspapers—Volunteers—Bassein subdivision—Bassein township—Kangyidaung—Thabaung township—Thabaung—Ngaputaw township—Ngaputaw—Thetkèthaung—Pyinkayaing—Diamond—Island—Hainggyi—Cape Negrais—Dalhousie—Kyonpyaw subdivision—Kyonpyaw township—Kyonpyaw—Ataung—Inyegyi—Ngathainggyaung township—Ngathainggyaung-Daunggyi—Athok—Yegyi — Kyaunggon township—Kyaunggon—Fisheries—Turtle banks.

Bassein. Bassein town, the headquarters station of the Bassein district of the Irrawaddy Division of Lower Burma, lies on both banks of the Ngawun or Bassein river in the delta of the Irrawaddy some 75 miles from the sea, in latitude 16° 46′ north and longitude 94° 48′ east.

Early history. The town has been for centuries a trading centre of importance but no trustworthy records of its foundation or early history are obtainable. Even the derivation of the name Bassein (ပုသိမ်) is far from clear and of the numerous theories few are convincing. One commentator says:—"In old records it is usually termed 'Kuthane' and derived from the Pâli word Sima or Thima, a boundary, with the prefix 'Ku.' The latter half of the word is probably so derived as the Pâli 'Sima' is commonly contracted into the Burmese 'thane,' which denotes a particular kind of religious building surrounded by boundary pillars, but the force of the prefix 'Ku' is not so apparent unless we can take it to mean 'earth'." Another says that Kawthamin which means the Island of the Prince or Governor, and indicates a chief town like Bassein, could easily be corrupted

into 'Kuthane' by the Burmese. Mr. Stevenson rejecting Dr. Forchhammer's theory that the name is derived from ပူသိမ် "hot thein"—on account of a massacre—seems inclined to favour the view of a Pyapon *hpôngyi* that Bassein was originally called 'Dom Passim' in the Mon language, 'Town of Passim,' that it was called so because it was inhabited by natives of India, and that the word is not derived from either the Burmese or Mon languages. The palm leaf historians certainly favour the theory that the name is Indian in origin.

ကုလားအတ္တုတတ်အောင်ထံတော။ပသီတို့ခင်းပြုဖြန်သောကြောင့်။ ပသိမြို့ဟု၍တွင်သည်။ထိုကုလားတို့ကို။ဂုသာရ။ဂုသာရီ။တလိုင်းမင်းညီနောင် ၂ ပါးတို့။ လုပ်ကြံ၍စစ်ပြုပြီးသွင်း။ ပုသိမ်မြို့ဟုသမုတ်၍။ ထင်ခံတည်ထောင်ဖြန်သည်။

It is at any rate indisputable that the town has long been inhabited by natives of India, and there are still traces of Hindu graves which are of great age. The thirty-two cities of 'Pathein' are mentioned in old Talaing histories as forming part of the kingdom of Pegu as early as 625 A.D.; tradition however says that it was founded by Onmadandi a Talaing Princess in 1249 A.D., but according to another account it was in existence many years earlier. In the sixteenth century Ralph Fitch visited a considerable port called Cosmin which was almost certainly Bassein. In 1755 it was seized by Burmese troops, one of the first incidents in Alaungpaya's campaign against the Peguans. By him it was utterly depopulated, though the East India Company's factory and property were respected. By a treaty with Alaungpaya in July 1757 the "King of Ava and Pegu" granted to the Honourable United Company "a spot or tract of ground situate on the bank of Persaim river, opposite to the Pagoda hill and the old town of Persaim of the following extent *viz*: Two hundred bamboos square, each bamboo containing seven cubits . . . ." This land cannot be definitely identified but it is probably the land occupied formerly by Messrs. Todd Findlay's mill and now in the possession of the Burma Rice and Trading Company.

The latter history of the town is dealt with in Chapter II, and the several aspects of the town have been dealt with in various chapters.

The Municipal area.

The limits of the Bassein Municipality were defined in Municipal and Local Department Notification No. 75 of August 18th, 1898, and are as follows:—

North.—A straight line drawn eastwards from pillar

No. 1 on the right bank of the Bassein river across the river to the mouth of the Mayan creek and thence about three-quarters of a mile eastwards following the southern boundary of the surveyed *kwin* Mayangyaung to pillar No. 11.

West.—A line drawn from pillar No. 1 along the eastern boundary of the surveyed *kwin* Wetsu in a south-westerly direction to pillar No. 2 standing on the Wetsu creek half a mile from its mouth; thence along the eastern boundary of the surveyed *kwin* Linwungyi till the boundary meets Okpon creek; thence along the left bank of that creek to pillar No. 3 situated thereon and half a mile from its mouth; thence along the eastern boundaries of the surveyed *kwins* Linwungyi, Yetho, and Yamanebin-gaing to pillar No. 4, standing on the southern boundary close to the Nyaung creek and half a mile from its mouth.

South.—A line drawn from pillar No. 4, along the left bank of the Nyaung creek to its mouth: thence a line drawn in a north-easterly direction across the Bassein river to pillar No. 5 standing on its left bank; thence from pillar No. 5 along the northern boundaries of the surveyed *kwin* Paganbyauk to pillar No. 6; thence from pillar No. 6 in a straight line to pillar No. 7, on the left bank of the Tabu creek; thence along the left bank of the Tabu creek to its junction with the Thayaung creek; and thence along the left bank of the Thayaung creek to pillar No. 8, standing nearly due east of the Tagaung Pagoda.

East.—A line drawn from pillar No. 11 on the northern boundary southwards along the western boundaries of the surveyed *kwins* Thitnyogon, Peinnegon, Kinbalinkyun, and Pyinkadogon (marked by pillars Nos. 9 and 10) to the fork of the Thayaung creek and along the left bank of that stream to pillar No. 8.

General description. The main portion of the town falls on the left or east bank of the river and is subdivided into the Athègyi, Talainggyaung and Myothit quarters. Between these quarters especially Athègyi and Talainggyaung which were formerly separate villages, a keen rivalry still exists. The Myothit quarter falls to the extreme east of the town, and to the east of this again stretches a plain covered with Pagodas, monasteries, and colossal images in every stage of decay, where the feasts and religious assemblies of the inhabitants are held. On the west or right bank is the Thinbawgyin quarter which contains many of the principal rice mills and godowns.

The principal streets of the town run parallel to the river and are joined to each other by short connecting roads. The most important is the Strand Road parallel to and within a stone's throw of the river, and from this bifurcate at different points Merchant Street and Commissioner Road which with their continuous sections, some with separate names, run practically the whole length of the town. While the European residences are not rigidly confined to any one locality the principal European or civil station is around the Zechaung quarter where the old fort was centred. Here in close proximity to the district court houses and treasury are grouped the residences of all the principal officials, the port office, the Queen Victoria Memorial Library, the Volunteer headquarters and the Municipal bazaar: near these are the public gardens, further east the hospital, jail and English church: to the north the residences of the Commissioner, Deputy Commissioner, Divisional Judge, Civil Surgeon and extensive properties of the American Baptist Mission. In front of this block is the Jubilee Memorial Public Park and near by the Masonic temple, post and telegraph offices, the Gymkhana Club, and the Circuit House. Another block of European residences is found at the south end of the Strand Road where also is the rail head and river station of the Bassein-Henzada Railway. At the south end of Merchant Street are the ecclesiastical buildings of the Roman Catholic Mission. In the centre of the old fort and behind the Port Office is the Shwemoktaw Pagoda, a shrine of great interest to Buddhists. The Seamen's Home at the south end of the Strand Road is now a flourishing institution controlled by a committee of which the Commissioner is the President and the Port Officer Chairman. The house is managed by a European Lady Superintendent and is supported partly by a grant from the Port Fund and partly by the fines for Sunday labour on ships loading in the port. **Principal streets and public buildings.**

For many years members of the Church of England in Bassein depended on the occasional visits of the Rangoon Cantonment Chaplain. The church was put in hand in 1870-71 and the public building completed in 1872 at a cost of Rs. 5,800. The porch was added several years after, and many other alterations have been made since. In 1882 arrangements were made to provide a chaplain for the charge of Henzada and Bassein, and when a chaplain was appointed a parsonage was provided by public subscription. The chaplain visits the Henzada and Myaungmya districts regularly. **Anglican Church.**

News-papers.

As early as 1867 there was a press in Bassein belonging to the Roman Catholic Mission. In 1881 a weekly newspaper was regularly published in Bassein, and since then numerous papers have been started. The principal newspaper is the "Bassein News" which is printed twice a week in English and has a circulation of about 600. A weekly Sgau-Karen newspaper called the "Daw Kalu News" has a circulation of 1,000. Besides these there are the "Zabumingala Advertiser," a weekly newspaper printed in English and Burmese with a circulation of about 200, and the "Aungzemingala Advertiser" printed in Burmese with a weekly circulation of about 80.

Volunteers.

The Volunteer company started at Bassein in 1883-84 developed into F Company of the Rangoon Volunteer Rifles with detachments at Henzada, Myaungmya and Ma-ubin. A suggestion made in 1887 to convert the rifle company into Garrison Artillery came to nothing. In 1903 the total strength of the company was 94 of whom about 50 were resident in Bassein. A new rifle range to meet the altered condition due to the introduction of the Lee-Metford rifle was constructed in 1903 and there was also a band attached to the company. In 1913 the strength had dwindled to less than 25 men and the company was disbanded, but was reformed as L Company of the Burma Railway Volunteers and attained in September 1914 a strength of 71. A Sergeant-Instructor attached to the company has quarters above the drill hall, and there is also a hall attached which was formerly the home of a flourishing Volunteer Club: the buildings belong to the Municipality. The want of a rifle range has hampered the activities of the company.

Bassein Sub-division.

The Bassein subdivision which has its headquarters at Bassein comprises the Bassein, Thabaung, and Ngaputaw townships.

Bassein township.

Bassein township which occupies the centre of the district has the following boundaries:—

Starting from the south-east corner of Byaikkyi *kwin* the northern boundary follows the southern boundary of Kyaunggon township, while the eastern boundary follows the western boundary of the same township up to the Myaungmya district. It proceeds along the Myaungmya boundary as far as Kanywa and then along the northern boundary of Ngaputaw township to near the source of the Kunchaung. From this point the western and northern boundaries follow the eastern and southern boundaries of the Thabaung township to

the south-east corner of the Byaikkyi *kwin*. The area of the township is 499 square miles, and the population rose from 110,836 in 1901 to 122,487 in 1911. The area under cultivation in 1913-14 was 180,742 acres yielding a revenue of Rs. 4,11,752. Outside Bassein town the people are not very prosperous as the soil in most of the township is poor and exhausted, systematic fallowing being the rule.

Kangyidaung. Kangyidaung is a large village situated on the right bank of the Daga river about 15 miles from its junction with the Ngawun. It was formerly the headquarters of the Thigwin township and had in 1881 a population of 2,351. In 1893 part of the Thigwin township was transferred to the new Myaungmya district. Kangyidaung became a centre of less importance and the township was amalgamated with that of Bassein in 1902. The inhabitants are principally engaged in agriculture and in 1911 numbered 2,948. It has a police station, post office, and a district bungalow. There are several other village-tracts in the Bassein township with a population of over 1,000 but none of them are of any peculiar importance.

Thabaung township. The Thabaung township, which now comprises an area of 1,252 square miles, was formed in 1861 out of several small townships. In 1874 it had a population of 29,838 which had in 1901 increased to 41,613 and in 1911 to 48,295. The population is naturally small as the whole of the centre and the greater part of the western portion is cut up by the spurs of the Arakan Yoma, and is mountainous, forest clad, and uncultivated; in the east along the Ngawun the land is almost a dead level and there are great areas liable to heavy flooding. The boundaries of the township which lies between 16° 35′ and 17° 16′ north and 94° 23′ and 95° 5′ east are as follows:—

From the mouth of the Thitpok *chaung* the western boundary is the Bay of Bengal up to the point about two miles north of Kyaukchun *chaung*. The line then runs along the district boundary to near where the Wadaw stream rises; following the Wadaw stream south-east as far as Anaukku it runs in an irregular line south and west till it reaches the Bodaw stream, which it follows to the Ngawun; it leaves the Ngawun at Daunggyi and goes east to the Kyibin stream which it follows to Kyibin village; thence it follows Tazinhla *chaung* to Tazinhla village and goes east along the Kyaikpi stream to the mouth of the Payathonzu. Following the Payathonzu and the Kyidawgyi *kwin* boundary to the mouth of the Yemagyi

stream it goes south along the eastern boundaries of the Sitpingyi, Gonmin, Dokyaik, Daungmigya, and Thabyegyun *kwins* to the Daga. After following the Daga to its junction with the Ngawun and the Ngawun up to and along the Kyaukchaunggyi creek as far as the Maungbi *chaung*, it follows the Maungbi to Obo *kwin*, runs by the northern boundary of Obo and the southern boundaries of Yegyi and Seikgyi *kwins*, goes north-west to near the source of the Kyaukchaunggyi, and finally turns south along the Yoma watershed to the Ngaputaw boundary which it follows to the sea. The township which contains 102 village-tracts has a large Karen population and above an eighth of the people are Christians. In 1903-04 the area under cultivation was 81 square miles which paid a land revenue of Rs. 1,13,000. In 1913-14 the area under cultivation was 79,830 acres and the land revenue Rs. 1,23,508.

haba- g.

The headquarters of the township is Thabaung on the right bank of the Ngawun and at the mouth of the Kanyinkyaung. In 1877 the population was 604, which increased in 1901 to 686 and in 1911 to 1,150. It is a poor village, the inhabitants of which are mainly agriculturists and fishermen, and its claim to notice depends on its importance as a township headquarters, with a police station and a post office. There is a daily postal service from and to Bassein by the steamers of the Irrawaddy Flotilla Company.

The village-tracts of Kanyinkyaung, Zibyukwin, and Kyungon, have a population of over 1,000 but the inhabitants are mainly agriculturists and the villages present no special features of interest.

gapu- v vn- ip.

Ngaputaw is the southernmost township of the district and lies at the extreme south-west corner of the Irrawaddy delta, between 15° 50′ and 16° 37′ north and 94° 11′ and 94° 47′ east. The limits have several times been altered. Before the annexation of Pegu the country on the west of the Yoma formed a portion of Arakan; shortly after the annexation it, together with a considerable tract to the north as far as the Kyeintali, was attached to Bassein and formed into the Kyaungtha township. Later on the portion north of the Gwa was given back to Sandoway, and still later when the Kyaungtha township was abolished the southern circles where added to Ngaputaw. The boundaries now are:—

Starting from the mouth of the Thitpok stream in the extreme north-west of the district the boundary is the same as the district boundary. On the east also it follows the district boundary as far as the mouth of

the Thetkèthaung where it joins the Panmawaddyi river. It then runs along the Thetkèthaung to the north and west as far as the Ngawun and runs along the Ngawun west to the mouth of the Thandwe river which it follows up to the mouth of the Kun *chaung*. It then follows the Kun *chaung* for some miles to the west and strikes north to the Yoma watershed for a short distance, whence after turning south along the Yoma for about four miles, it runs north-west till it meets the Po Tan *chaung* and follows the Po Tan and later the Thitpok *chaung* to the sea. The township is divided into two very dissimilar tracts by the Arakan Yoma. The extreme south-eastern part consists of a large island 33 miles long by about 7 broad lying in the Ngawun with the Bassein mouth on the west and the Thetkèthaung on the east, intersected by numerous tidal creeks, and with a rocky promontory running out seawards and ending at Purian Point. Off the Bassein mouth is Diamond Island; further out to sea the Phaeton shoal: and still further the Alguada reef. In the Bassein channel is Diamond Island, and further up to the river Long Island, a long stretch of forest covered ground with a low ridge of hills running along its eastern side and an outcrop in the river called the Sesostris rocks with eight feet of water over them. Ngaputaw island, still further north, is much intersected by creeks and has a low range of hills on the western slope on which stands the town of Ngaputaw. Near Thamandewa and Kyaukthein-baw, a few miles below Ngaputaw, is procured most of the lime used in the Bassein district. The population in 1901 was 37,126 and 46,379 in 1911, distributed over 110 village-tracts, but this total was spread over an area of 1,457 square miles, so that the density in 1911 was only 32 per square mile. The uplands of the Arakan Yoma render large areas in the west useless for cutivation purposes but there is considerable cultivation in the east. In 1903-04 cultivation, which had increased 70 per cent. in 10 years, extended over 107 square miles with a land revenue of Rs. 1,03,000, while by 1913-14 the area was 97,791 acres yielding revenue Rs. 2,07,489. The township has the only salt fields in the district: they have been described in other chapters.

Ngaputaw.

The headquarters of the township are at Ngaputaw, which lies about sixteen miles due south of Bassein town on an island formed by the junction of the Panmawaddi and the Bassein river. The town is situated on the western slope of the low range of hills. The inhabitants who numbered 896 in 1,877 and 1,476 in 1911 are mainly cultivators and traders while it is the centre for a good deal of business due to the

presence of the courts, police station, post office, and telegraph office. There is daily steamer communication with Bassein.

etkè-ung. Thetkèthaung, which with its southern neighbour Ongaung, forms practically one village, lies on the right bank of the Thetkèthaung river and is of long standing. The inhabitants who numbered 1,019 in 1877 and 1,583 in 1911 contain a considerable proportion of Talaings and a number of imported natives of India. They are mainly salt and *ngapi* makers and fishermen, and the fishing is done mostly with the *damin*. The village was formerly a scene of much religious activity and contains the remains of many old pagodas and a curious carved elephant.

nka-ng. Pyinkayaing is a large and important village on the Kalaukthaik creek near the mouth of the Bassein river. The inhabitants who numbered 608 in 1901 and 1,664 in 1911 are mainly cultivators and fishermen: many of the latter leave Pyinkayaing in the fishing season to form temporary fishing hamlets elsewhere. Some of the best varieties of *ngapi* are manufactured at Pyinkayaing. The people are mostly Talaing and this is one of the few places where the Talaing language is still spoken, though it now contains a number of Burmese words and is confined to the elders whose children do not learn it. Pyinkayaing has a post office and police station.

mond nd. Diamond Island is a low tree covered island about a square mile in extent and visible at about fifteen miles distance lying off the mouth of the Bassein river in latitude 15° 51′ 30″ N. and longitude 94° 18′ 45″ E. distant 5½ miles from Pagoda Point and about 8 miles from Negrais Island. It is diamond or rather quadrilateral in shape having the angles facing the points of the compass. Though it does not appear to have been inhabited by the Burmese they visited it regularly to collect the eggs of the turtles which frequent it in large numbers. It is known to the Burmese as Thamihla or Meinmahla Kyun, the island where, according to a tradition common to many countries and peoples, certain beautiful princesses vowed to celibacy but betrothed to royal bridegrooms sought safety and peace. The island which is surrounded by a reef some 300 yards from the shore has for many years been occupied by the Light-house establishment as the home station of the detachment in charge of the Alguada Reef Light-house some miles away. There is a small anchor light on the island. There has been connection with Bassein by telegraph line since 1877 and since 1903 there has been a Marconi wireless station with a powerful

installation which allows communication with Port Blair and Colombo. It is also the centre of the important turtle egg industry; some million and a half eggs of the green and loggerhead turtles are taken from the island every year.

Hainggyi or Negrais Island. Hainggyi or Negrais Island is an island in the Bassein or Ngawun river near the western bank three and a half miles up from Pagoda Point and rendered conspicuous by a hill at its northern end which slopes away to the centre: a narrow belt of level ground skirts the shore almost all round. The channel between the island and the western bank of the river was formerly one mile broad on the south and four and a half on the north, opposite the abandoned station of Dalhousie, but has now greatly silted up. In 1686 the Governor of Madras anxious to open out trade with Burma and knowing that it was accessible at all seasons of the year both by sea and land sent an expedition to survey the island. The vessel had to put back but in 1687 Captain Weldon took possession. In 1753 a trading settlement was formed under Mr. Hunter. On October 5th, 1759, two days after the arrival of Captain Southbey, the Europeans were attacked by the Burmese, ten were killed and one only survived, a midship man, who escaped to his ship. The island did not come into possession of the British till 1852 when Pegu was annexed by Lord Dalhousie. Two brick walls of the ancient factory are still standing.

Cape Negrais. Hainggyi was known from early time as Negrais Island and in connection with the name Cape Negrais Mr. Grant Brown, Deputy Commissioner of Bassein in 1914, wrote—"Pagoda Point is one name for the extremity of Cape Negrais. In small maps a bluff a few miles up the coast is marked as being Cape Negrais, apparently because it is visible some way out at sea, whereas Pagoda Point is not. But all the old maps, as far as I know, show what we now call Pagoda Point as Cape Negrais, and there can be no doubt that this is correct. When at Pagoda Point I was told that the headland to which we give that name and which is now called by the Burmese 'Hmawdin' was formerly called 'Nagayit'. The headland sometimes shown as Cape Negrais is never called 'Nagayit', though it has a name, I think, 'Akawgyi': Negrais is a Portuguese corruption of 'Nagayit." In this connection it is interesting to note that Ralph Fitch wrote of "the bar of Negrais".

Dalhousie. Very soon after the occupation of Pegu it was deemed advisable to remove the headquarters of the Bassein district southward from Bassein to "a position unrivalled as a port in the Bay of Bengal," near the mouth of the river on the right

bank, which was to be named "Dalhousie" after the Governor-General to whom was due the annexation of Pegu. The Marquess of Dalhousie himself writing to Sir George Cooper on August 12th, 1854, said: "The site for the new town which is to be built at the mouth of the Bassein river has been chosen. It is a very noble one and will one day be a great commercial city, and its name is Dalhousie at the request of the local authorities not by my decree."

This site had for many years attracted the attention of Naval officers. From its natural position it was admirably adapted for a harbour of refuge and as a port of call: and placed at the natural outlet of a vast tract of fertile country it was hoped that it would become a mart of importance. In 1855 the main roads of the city had been traced out, a strand road had been made, the site of the public buildings determined, and a pier was in course of construction. In 1856-57, however, the whole site was submerged by a sudden rise of the sea consequent on a cyclone. Though almost every building was swept away and several lives were lost the idea was not abandoned and the courts and the gaol were transferred there from Bassein: in the same year however they were transferred back to Bassein and "Dalhousie" has sunk into its former state of waste and jungle. The bay at Dalhousie—now a small village known as Myothit—has in recent years silted up to such an extent that at low tide the water recedes for a mile or more from the river bank.

Kyonpyaw Subdivision.

The Kyonpyaw subdivision has three townships, Kyonpyaw on the east, Ngathainggyaung on the west, and Kyaunggon on the south. Though its area of 919 square miles is small compared with the 3,208 square miles of the Bassein subdivision it has a bigger population and is much wealthier and more progressive than the southern region.

Kyônpyaw Township.

In the north-east corner of the district with the exception of a narrow strip of high land running through the centre of the township the land is extremely fertile and is almost entirely under paddy cultivation. It contains numerous large and wealthy villages, *e.g.*, Ataung, Mankya, Matsekku, and Inye. The high land is under plantains. Communications by road and water are adequate and the the people are prosperous. The boundaries of the township are as follows:—

The northern and eastern boundaries follow the district boundary from the north-east corner of the Ngathainggyaung township along the Henzada and Ma-ubin boundaries to where the Kayagan and Gamin streams meet. Then

following the southern boundaries of the Ganein, Sinbaung, and Wetchaung *kwins* to the Daga river it runs along the Daga river to the south-west corner of Yogyi *kwin*, and thence by the eastern and northern boundaries of the Paukseinbe, Yonngu, Zingu, Peinin, and Kwinlyangè *kwins* to the Kyonpa stream: the western boundary from that point coincides with the eastern boundary of Ngathaing-gyaung township.

The township which has an area of 320 square miles had in 1901 a population of 82,144 which rose in 1911 to 90,704. The density per square mile is 283, the highest figure in the district. Kyonpyaw is the richest part of the district and in 1913-14 its cultivated area was 122,194 acres giving a revenue of Rs. 3,41,305.

Kyon-pyaw. Kyonpyaw which is now the headquarters of the Kyonpyaw subdivision, lies on the right bank of the Daga river at the mouth of the Yegyi in 17° 17′ north and 95° 16′ east. In 1876 when it was the headquarter town of the Sabeyon township it had a population of 2,490 which rose to 3,358 in 1901 and 5,429 in 1911. The inhabitants are still principally traders and cultivators and its growth has been accelerated by regular steamer communication with Bassein since 1893, by the opening of the railway with which it is connected by a metalled road to Yegyi five miles away, and finally by becoming the headquarters of the subdivision in 1913. It is a notified area under the Municipal Act, and has a large bazzar, a fine new police-station, and Public Works Department bungalow. It is also connected by an unmetalled road with the large and important village of Inye five miles to the south. Lying at the junction of the two branches of the Daga, namely the Zayathla creek and the Daga creek, it is an important centre for paddy buyers. There is a small hospital but this at present is accommodated in a *zayat*.

Ataung Ataung is a large and wealthy village lying on the Daga creek about 12 miles distant by road from Kyonpyaw. It is an important paddy buying centre and also for the sale of plantains. It has a Public Works Department bungalow and a police station. Ataung village and the neighbourhood have a well deserved reputation for crime and turbulence.

Inyegy The Inye lake has already been referred to in Chapter I and the revenue derived from it as a fishery discussed in Chapter X. The lake was of considerable importance even in early times. It is said that there were hereditary chiefs of the fisheries and that 60 viss of silver was annually paid to the Burmese Government by the hereditary holders. The

rights were transmitted to heirs so that the shares were numerous. About 1190 B.E., however, there was a change in the system of administration of the Bassein district and *Pehnins* or Chief Boatmen were appointed having jurisdiction over tracts about the size of townships. These *Pehnins* made a clean sweep of the hereditary rights of the fishermen and the rights were never revived. The system of working is of considerable interest; a fixed screen called a *patein* is placed across the part of the lake opposite Inyegyi village in March. At the same time the moveable screen, called the *gyan* is started on the opposite side of the lake gradually worked northward to the top of the lake and then southward towards the *patein*. By May the fish are enclosed between the *gyan* and the *patein*, the ends of the *gyan* and *patein* are brought together, and the area reduced to about an acre: from this the fish are easily extracted by means of a smaller *gyan* in July and August. Thus on this single operation depends the success or failure of the season's labours. The great bulk of the catch is of three kinds of carp, *Ngathaing*, *Ngamyitkyin*, and *Ngayin*, and Major Maxwell was of opinion that they were hatched in Upper Burma, came down country in enormous shoals in July and August, and finding their way into the Daga entered the lake through the Inyegale creek. As a result of his enquiries the practice of taking small fry in the Inyegale creek was stopped with the result that the revenue which dropppd as low as Rs. 4,280 in 1895-96 rose to Rs. 35,600 in 1906-07.

In the operations about sixty men are employed, and for the six months season they get Rs. 25 each in cash and also have permission to net fish for two months before the screens are in position, the average daily value of the catch being Rs. 2 per man.

The fishermen are often known as "In Talaings" and though they no longer speak the language they may possibly be of Talaing descent: they are regarded with disfavour socially and do not intermarry with other classes of the population.

Numerous village tracts in the Kyonpyaw township have more than 1,000 inhabitants but the villages present no special features of interest.

Ngathaing-gyaung township.

The eastern portion of the township adjoining Kyonpyaw is protected by the embankment and is fertile, wealthy, and populous; the best land near Ngathaing-gyaung town fetches an average of Rs. 80 per acre. The south, however, is liable to severe flooding as is also the whole cultivated area to the west of the Ngawun; still

further to the west there are large uninhabited jungle tracts on either side of the Yomas. Tobacco is extensively grown on the flooded silt soil opposite Ngathainggyaung town and has gradually expanded from 2,000 acres in 1901 to over 5,000 acres in 1914. The larger and wealthier villages lie either along the railway line or along the Ngawun river. The population is mainly agricultural though there are a fair number of traders and paddy brokers. The pottery industry at Kwinlya and neighbouring villages has been already mentioned.

The area of the township is 336 square miles and the population which was 64,891 in 1901 and 77, 324 in 1911, averages 230 to the square mile. The total cultivated area in 1913-14 was 109,700 acres and the revenue Rs. 2,82,526.

The extreme north-east boundary point is at Kyonpadok, where the Yenauk and Tawhla streams meet. Thence the northern and western boundary follows the district boundary to where the Thabaung township boundary runs along the Wadaw stream. The southern boundary follows the northern boundary of the Thabaung township to the north-east point of Kyidawgyi *kwin*, the southern boundaries of the Wetla and Kanyin, and the south and east boundaries of the Kaingchaung *kwins* to where the Thongwa and Kyonpyaw streams meet. It then proceeds along the southern boundaries of Sat and Kyonpa *kwins* and the eastern boundaries of Kyonpa, Thitngoktadaung, Thayetok, and Yondon *kwins* to the Yondon creek: it follows the Yondon and Hmawthe creeks to Pogaung *kwin* of which it follows the eastern boundary. After following the eastern boundary of Ngayanchaung *kwin* to the Yegyi creek it follows the Yegyi creek as far as Kyonpadok.

Nga-thaing-gyaung Daung-gyi.

Ngathainggaung-Daunggyi is a municipality and up to 1913 it was the headquarters of the subdivision. The population of 7,182 has remained stationary between the censuses of 1901 and 1911 and may even decline now that the headquarters of the subdivision have been shifted. Ngathainggyaung lies on the left bank of the Ngawun and is protected by the embankment. Owing to erosion, however, fresh embankments have recently been constructed to save the town. Daunggyi on the right bank is much poorer and is mainly interested in tobacco cultivation. Ngathainggyaung is wealthy, and contains a very fine '*hpongyi kyaung*. There is a police station, a bazaar, a post and telegraph office, and an inspection bungalow under the

control of the Executive Engineer, Embankment Division. The inhabitants are mostly petty traders, shop-keepers, or paddy brokers. There is a small hospital.

Athok. Athok, one of the largest and most flourishing village tracts in Ngathainggyaung township, has traditions dating back to Thamokdagawtha and Onmadandi, the Talaing king and queen of Bassein. The name, which is Talaing, is said to mean 'after birth' (*placenta*) and to have been given to the village as the birth-place of one of the early kings of Bassein. Reference is made in Chapter II to its ruined walls. It is now the centre of a large cultivated area and the export of paddy from Athok railway station to Bassein was in 1913 more than 7,500 tons. The population mainly consists of agriculturists and traders and numbered 2,396 in 1911. It has a police station, post office, railway telegraph office, and a district bungalow.

Yegyi. Yegyi is now the largest village in the Kyonpyaw sub-division with a population of 2,901 in 1911. It is 50 miles from Bassein by rail and is the station for Ngathainggyaung and Kyonpyaw which lie on the east and west about five miles away. It has a police station, a small bazaar, a district cess fund bungalow, and a small railway hospital. A strip of land near the station has been acquired as a site for the railway town but has not been laid out owing to lack of applicants for house sites. Formerly it was the headquarters of a township but has somewhat declined since they were removed.

Kyaunggon Township. Kyaunggon which is now the southern township of the Kyonpyaw subdivision was in 1867 a small township but was added to Sabeyon township shortly after. It again became a township when Bassein and Kangyidaung were amalgamated in 1902. It now has an area of 263 square miles with 79 village-tracts. The population was 54,817 in 1901, and 55,799 in 1911. The whole township is low-lying, fertile and cut up by tidal creeks.

The area cultivated in 1913 was 109,659 acres and the land revenue Rs. 2,73,890. The boundaries are as follows:—

Starting from the Kya-aing stream the northern boundary proceeds along the southern boundary of the Kyonpyaw township up to the Ma-ubin district. Following the eastern boundary of the Bassein district to the Kyonlangu stream it runs north to the Natsabagyaung *kwin* the western boundary of which it follows to the Daga. It runs along the Daga to the south-east corner of Byaikkyi *kwin* and then follows the eastern boundary of the Thabaung township

to the Kya-aing stream. It is small and not so progressive or wealthy as the northern townships. It lies on both banks of the Daga: the portion on the right bank is not fertile and in the interior is liable to severe flooding from the Ngawun. The old Mobya north circle on the left bank formerly belonged to the Myaungmya district from which it was transferred in 1899. This area forms the wealthiest and most fertile portion of the township, with some large and prosperous villages such as Thaunggyi, Daungyi, and Ashechaung, the last being exclusively inhabited by Indian Mahomedans There are no roads in the township but communications are fairly good owing to the Daga and the Minmanaing creek which connects with the main Irrawaddy river *viâ* Pantanaw. A road to connect Kyaunggon the township headquarters with the railway line at Yodayadet would be an advantage and the presence of two shoals, one near Yekalok village and the other near Kyaunggon town, somewhat impede traffic. The population is entirely agricultural.

The headquarters are at Kyaunggon which lies on the right bank of the Daga river about 15 miles above its junction with the Ngawun. It has a police station, post and telegraph office, a bazaar under the control of the District Cess Fund, and a district bungalow. The population which in 1901 was 1,717 had grown to 2,270 in 1911. Kyaunggon.

The following note is compiled from Captain Maxwell's Report on fisheries of the Irrawaddy division. The fisheries of the district fall into five main tracts :— Fisheries

(1) Tabu, consisting of the Tanzinhla, Athok, and Sitpingale creeks. In its lower reaches the Athok becomes the Kyaikpi and from Tanzinhla village to the Ngawun is known as the Tabu. It and the Tanzinhla creek originate in the low-lying land south of Yegyi. Most of the fisheries consist of creeks which were formerly bunded and baled in the dry season.

(2) Shwenyaungbin, which rises behind Inye village and proceeds south and south-east to Payani and thence to the Ngawun about three miles below Thabaung. The head waters are at the height of the flood conected to a slight extent with the well-known Inye lake. The whole country side is a continuous sheet of water. In the upper part of the creek are many pools and gayets, but below Apinhnase the fisheries are all creek fisheries.

(3) Ngawun river, consisting of fisheries debouching into the Ngawun, in all but two cases from the west side of the river. They take their rise in the hills or at the foot of

them, but no exclusively hill-stream fish are taken. Some of the main channels are very rapid and can only be worked with *myinwunses*.

(4) Daga river, consisting of the main channels of the Daga and its confluents and affluents. The Daga rises behind Henzada and runs past Kyonpyaw, Kyaunggon, and Kangyidaung and joins the Ngawun about thirteen miles above Bassein. The Natsinngu joins it at Kyonpyaw. The Yegyi creek, a tributary of the Natsinngu, rises to the north-east of Ngathainggyaung. There are three lakes, the Inye, Shake, and Paiktaw. Below Kyonpyaw are several larger pools to which the larger fish resort in the dry weather. The Daga is worked with large meshed nets and *bawuns* for the large carps. The lakes are worked for carp with nets and *gyans* and the smaller feeders with weirs and bunds for all sorts of fish.

(5) The Pebin tract, consisting of the Pebin creek which rises near Kangyidaung and drains due south, joining the Ngawun some fifteen miles below Bassein. The chief feeders are the Apinhnase creek and the Thetyin creek. The fisheries are worked with weirs and bunds and the upper reaches with weirs, *bawuns*, and by baling but they are of small value.

(6) A sixth tract includes fisheries in portions of the Kyaunggon and Kyonpyaw townships which form part of the drainage area of the Bawdi and Pathwe creeks. It has a number of pools but the fisheries are small and unimportant.

(7) Sea fishing is carried on mainly with the *pinle damin* and there are in the Ngaputaw township ten *damin* fishing villages of which the most important are Pyinkayaing, Zibyuseik, Thetkèthaung, Hainggyi, Payahla, and Kyonku.

The great bulk of the fish caught is made into *ngapi*, dried fish (*nga-kyauk*), or pickled fish (*nga-kyin*). There is little demand for fresh fish except in Bassein town which is supplied from the Tabu and Shwenyaungbin fisheries. There are numerous kinds of *ngapi* no less than 18 being enumerated by Major Maxwell in his report on inland and sea fisheries in the Thongwa, Myaungmya and Bassein districts, but the two main kinds are the *nga-nok* or *thon-u-sat* used by the ordinary cultivator, and *kaunggyi-daung* used by the wealthier classes. The fish used in the manufacture of *thon-u-sat* are chiefly *ngayan*, *nga-kon ma*, and *nga-pyin-thalet*, and for *kaunggyi-daung* mainly *nga-mayin*, *nga-bat*, and *nga-pha-ma*.

As a rule 100 viss of fresh fish and 30 to 40 salt give about 40 viss of *ngapi* if no rice flour or boiled rice is added to increase the weight. In 1914 the price of *thon-u-sat* varied between Rs. 40 and Rs. 50 and of *kaunggyi-daung* between Rs. 70 and Rs. 75 per 100 viss. The process of *ngapi* manufacture is fully described in the report referred to above. Pickled fish is almost entirely confined to the Bassein district where it is largely consumed. It consists chiefly of *nga-kon-ma* and small carp which are decapitated, scaled, flattened with *dahs*, mixed with boiled rice and salt, and allowed to remain for three days. It is sometimes cooked but more often eaten raw. The manufacture of pickled fish is a considerable industry in the Thabaung township and many of the smaller fisheries near Ngathainggyaung depend entirely on the sale of their small fish for this purpose, the fish realizing Rs. 5 or Rs. 6 a basket instead of Rs. 2 to Rs. 3 for fish to be made into *ngapi*.

Of dried fish the main varieties are *nag-yan-chauk* and *nga-ku-nga-gyi* *Nga-yan-chauk* is dried in the sun and costs from Rs. 130 to Rs. 150 per 100 viss, while *nga-ku-nga-gyi* which is generally roasted over a slow fire by night, costs Rs. 150 to Rs. 175 per 100 viss.

Turtle banks.

The turtle banks of the district are :—

(1) The Pyinkayaing banks	... Loggerhead and a few green turtle.
(2) The Hainggyi banks	... Loggerhead.
(3) The Thabaunghmaw banks	... Loggerhead.
(4) Diamond Island ...	... Green turtle and a few loggerhead, the hawks-bill turtle has also been seen here.
(5) Nganchaung ...	... Loggerhead on the mainland, and green turtle on the islands called Sabagyi-thaung.
(6) Ngayokkaung ...	... Loggerhead on the mainland and green turtle on the islands of Hainggyi and Thityaung.
(7) Sinma	... Loggerhead and a few green turtle.
(8) Bawmi ...	... Loggerhead on the mainland and hawks-bill turtle on Thabinhmaw island.

There are no tortoise banks in the district. The above banks are subdivided (except four) for revenue purposes, and leased by auction in accordance with detailed recommenda-

tions made by Captain Maxwell in his report on the Turtle Banks of the Irrawaddy Division, 1898, from which this note is compiled.

Four species of marine turtles lay on the banks:—

(1) Green turtle
(2) Loggerhead
(3) Hawks-bill
(4) Leathery

the last two being rarely met with. The real habitat of the turtle is probably in the Andamans, and only a small percentage visit Burma. The number laying on Diamond Island was seriously affected in 1889-90 by the operations of the marine survey with steam-launches and boats surveying the rocks and shoals all round the island and as far out as the Alguada Reef and light-house, that is on the path of the turtles from the Andamans to Diamond Island.

Once out of the water, intent on laying, the green turtle is practically fearless, and takes no notice of human beings. She first digs a large hole in the sand above high water mark for herself, and another smaller one for the eggs. Having laid the eggs, she proceeds to fill up the hole and press the sand down. She then fills up the larger hole, obliterates all marks tending to show the locality of the eggs, and then returns to sea. Her own tracks easily guide a human being to the nest, where the eggs are 18 inches to 2 feet below the surface. He pokes about with a stick to get to its exact locality, opens the nest by hand, and takes the eggs. This is done first thing in the morning, as the turtle lays at night. Eggs in a nest once opened addle and never hatch. Salt is largely used to preserve them. Incubation takes about 42 days. Once hatched, the young run to the sea about 10 yards distant, but about fifty per cent. fall a prey to crows and kites on the way, and on reaching the sea small sharks and predatory fishes take a heavy toll of the remainder. "In a few seconds all is quiet; either the brood is completely dispatched, or the fittest and most lucky have escaped and hidden themselves under the nearest rocks". Where the turtle live after getting to sea is not known. About 1,600,000 eggs are taken yearly on Diamond Island. How often the green turtle lays is not known.

The loggerhead's *modus operandi* is similar, but she is ever more fearless than the green turtle, and the Burmans call her *kwe* because she is as foolish as a dog in the publicity with which she lays her eggs. She lays three times a year.

The hawks-bill is the turtle of commerce, whose epidermal horny shields yield the tortoise shell. The species is a stranger here except off the Bawmi circle, where about 10,000 eggs are deposited annually.

The leathery turtle is so called from its peculiar carapace It grows to 800 lbs. weight and is of enormous strength. The green turtle is also very strong. "Tradition relates that a very ordinary sized green turtle visiting Diamond Island walked away with an Executive Engineer and his wife weighing together some 30 stones, with a somewhat corpulent Civil Surgeon trying to stop the runaway by adding his weight to the load". Loggerheads lay from September to the end of November and green turtle all the year round, but in greatest numbers in the rains.

The eggs after supplying local requirements are sent all over the country. Green turtle eggs fetch Rs. 1-8 per 100 in Bassein. Loggerhead eggs fetch Re. 1 to Rs. 1-4 on the south coast, Rs. 2 on the southern part of the west coast, 13 annas higher up at Ngayothaung, and 11 annas at Sinma. Rs. 2-8 to Rs. 3 and sometimes more are paid for eggs retailed in Rangoon. They are excellent eating. "The yokes raw of two or three enable one to travel all day without further sustenance". Many thousands are given to the *pongyis* during Lent. They are consumed all over the delta, and by the well-to-do in Upper Burma.

The workers on the banks are all Burmans or Arakanese. Except in Diamond Island collecting turtle eggs is a by-product and not a whole-time occupation. Their permanent occupation is generally fishing. The workers live in the vicinity and saunter out in the early morning and collect the eggs, selling them in the vicinity.

List of Deputy Commissioners who have held charge of the Bassein District.

Serial No.	Name of Officer.	Year.	
1	Captain F. N. Bayly	February 1865.	
2	Mr. H. W. Beddy	February 1865.	May 1866.
3	Lieutenant M. C. Poole	May 1869	
4	Major A. R. MacMahon ...	October 1869.	
5	Captain W. W. Pemberton ...	November 1869.	April 1873.
6	Mr. St. John	April 1873	May 1876.
7	Mr. C. J. A. Duke	June 1876	July 1876.
8	Mr. St. John	July 1876	May 1877.
9	Mr. H. N. Davies	May 1877	November 1877.
10	Mr. G. D. Burgess	November 1877.	December 1878.
11	Colonel Spearman	December 1878.	February 1879.
12	Mr. W. Munro	February 1879.	March 1883.
13	Mr. St. Barbe	March 1883.	March 1886.
14	Captain Pemberton	March 1886.	January 1887.
15	Mr. A. R. Birks	January 1887.	July 1888.
16	Mr. T. C. Mitchell	July 1888	August 1888.
17	Mr. H. Adamson	August 1888.	March 1889.
18	Mr. A. R. Birks	March 1889.	July 1890.
19	Mr. J. A. Bridges ..	July 1890	December 1890.
20	Mr. C. H. Weidemann	December 1890.	May 1891.
21	Captain G. E. T. Green	May 1891	November 1891.
22	Mr. G. H. Weidemann	November 1891.	January 1892.
23	Captain A. B. Pritchard ...	January 1892.	March 1892.
24	Mr. G. H. Weidemann ...	March 1892.	March 1893.
25	Mr. H. S. Hartnoll	March 1893.	March 1896.
26	Major F. D. Maxwell	March 1896.	August 1897.

List of Deputy Commissioner who have held charge of the Bassein District—concld.

Serial No.	Name of Officer.	Year.	
27	Mr. H. M. S. Mathews	August 1897.	March 1899.
28	Mr. M. Laurie	March 1899.	October 1899.
29	Mr. G. F. S. Christie	October 1899.	November 1899.
30	Mr. H. Thompson	November 1899.	March 1900.
31	Mr. M. Laurie	March 1900.	September 1901.
32	Major H. DesVœux	September 1901	September 1903.
33	Mr. H. A. Thornton	September 1903.	November 1903.
34	Major H. DesVœux	November 1903.	June 1904.
35	Mr. A. E. English	June 1904	August 1905.
36	Major W. R. Stone	August 1905.	October 1905.
37	Major H. A. Browning	October 1905.	March 1906.
38	Mr. H M. S. Mathews	March 1906.	September 1906.
39	Mr. H. N. Tuck	September 1906.	October 1906.
40	Mr. A. Gaitskell	October 1906.	May 1907.
41	Colonel F. H. Eliott	May 1907	August 1907.
42	Mr. A. G. Cooke	August 1907.	December 1907.
43	Colonel F. H. Eliott	December 1907.	April 1909.
44	Mr. J. E. Houldey	April 1909	May 1909.
45	Mr. W. F. Grahame	May 1909	July 1909.
46	Mr. H. Clayton	July 1909	August 1909.
47	Mr. W. F. Grahame	August 1909.	October 1910.
48	Captain G. H. Newcombe ...	October 1910.	November 1910.
49	Mr. W. F. Grahame	November 1910.	December 1912.
50	Mr. G. E. R. Grant-Brown ...	December 1912.	October 1914.
51	Mr. G. F. Arnold	October 1914.	

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